Supreme Court, U.S.
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No. 94-143

In The

Supreme Court of the United States

October Term, 1994

ALFRED NELSON, EVELYN NELSON,
LEWIS HICKS, III, AND BERNICE HICKS,

Petitioners,

v.

COMMONWEALTH OF MASSACHUSETTS AND
TOWN OF CHATHAM, INTERVENOR,

Respondents.

Petition For A Writ Of Certiorari
To The Supreme Judicial Court
For The Commonwealth Of Massachusetts

PETITIONERS' REPLY BRIEF

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NEW MATERIAL IN CONTROVERSY

The following new issues are raised in Respondents' brief:

1) A Final Decision is imminent in the administrative proceeding.

2) Respondents favor a seawall for Petitioners.

3) Petitioners could have filed an EIR for their seawalls.

4) Petitioners' houses are safe.

5) Petitioners only challenged facial validity of the regulations.

6) Petitioners did not apply for a variance until September of 1993.

The following additional facts are introduced in this brief by Petitioners:

The Scientist who provided the science for the regulation protested the regulatory distinction between dune and bank and says that seawalls on coastal bank are likely to harm properties on dune without seawalls.

There are no known studies of the impact of respondents' seawall regulation on the coast. Respondents have not updated the science underlying their regulation since 1978.

Testimony by the Petitioners as to their legal and expert fees to date, including costs of administrative remedies.

A showing of discrimination against nonresidents of Chatham offered as part of Variance Application of September 1993.

1) *A Final Decision is imminent* (Res. 13, footnote 14). A Final Decision (App. 69) is an intermediate step on the way to a "Final Order" (App. 73). Respondents have promised a Final Decision (Res. App. 43) by October, not a Final Order.

Petitioners have spent over $330,000 on legal and expert fees since 1991. Sixty thousand dollars of this was in preparation for the Administrative hearing (App. 64).

Petitioners have spent $140,000 on substandard flood control ordered by the Respondents and suffered $100,000 in flood damages since 1991 (Pet. 9).

Respondents can delay forever by perpetually demanding more information. At $75,000 a year in administrative and flood control costs, Petitioners' endurance is limited.

2) *Respondents favor a seawall for Petitioners.* Respondents' seawall plan (Res. App. 28) (actual plan at App. 95) was not drawn by an engineer, is substandard and would require the voluntary cooperation of seven families to build.

There is no way to compel group participation and some of the families are reluctant to build a seawall they do not presently need.

Respondents say a seawall with an average elevation of 12 feet above and 1 foot below mean low water will protect Petitioners.

The Department of Waterways specifies an elevation of 20 feet above and 8 feet below mean low water (App. 88) for Chatham.

Seawalls built since 1987 to lesser specifications are now failing (App. 91).

Respondents' seawall is a ruse to avoid outright permit denial. It is as expensive and ineffective as the other flood control methods forced on Petitioners (supra).

3) *Petitioners could have filed an EIR for their seawalls* (Res. 4 and 6).

The EIR had to include a discussion of the impact of each of the thirty-four or more seawalls built or planned over a 2.5 mile stretch of coast (Pet. App. 151).

4) *Petitioners' houses are safe* (Res. 16, footnote 16). Past experience shows this is unlikely (Pet. App. 39). Such safety as exists has cost $240,000 since 1991 (supra).

5) *Petitioners only challenged facial validity of the regulations* (Res. 18).

Petitioners filed a brief on coastal science with over 300 pages of appendix. Respondents replied with four affidavits by coastal experts. The issue was coastal science.

Petitioners argued that Respondents made unexplained exceptions to their seawall ban which were either destroying Petitioners' properties (Pet. 12) or showed that the ban was unjustified (Pet. 14).

Respondents convinced the lower courts that the distinction between coastal dune and coastal bank justified the exceptions.

Lower Court decisions might have been different had Respondents complied with discovery requests and revealed that their own scientists told them that an exception based on dune and bank was unjustified (App. 27)

and that seawalls on coastal bank are likely to deny sand to properties downstream (App. 58).

Respondents still treat the loss of all sand to deep water as debatable (Res. App. 23), despite protests (App. 29) and the testimony of their own expert (App. 59).

The premise that beaches and dunes control erosion is unsupportable because dunes and beaches lose all of their sand to deepwater and require ongoing erosion of the coast just to exist (Pet. 11).

Seawalls hold sand onshore, thus preserving a non-renewable natural resource.

Respondents intend that such segments of the Massachusetts coast as they chose shall be returned to a state of nature (Pet. App. 188).

People who are favored by Respondents get seawall permits (App. 4).

Respondents discriminate against nonresidents in seawall permitting (App. 5).

6) *Petitioners did not apply for a variance until September of 1993* (Res. 4 footnote 7). This is misleading (App. 77, 80 and 83). Moreover, Respondents' suggestion that the September application lacked required information (Res. App. 39) is inaccurate (requirements at App. 12 and 13, application at App. 1).

Respondents have not studied the impact of their regulation on the coast (App. 57), have not updated their science (App. 98), have illegally forbidden study of the twenty-nine seawalls they have allowed in Chatham (Pet.

14) and continue to suppress information with which they do not agree (supra).

Respondents' regulation is a psuedo-scientific sham. Respondents' remedies are inexhaustible. Petitioners' resources are not. Respondents intend to destroy Petitioners by delay.

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APPENDIX

TABLE OF CONTENTS

Page

Variance Request, Nelson and Hicks, dated September 20, 1993 .....App. 1

Deposition of Graham Sherwood Giese, pages 1 and 2, 32 - 34, dated July 12, 1994.....App. 25

Correspondence from Nicholas B. Soutter to M. Kathryn Sedor, RE: Misstatements of Fact, dated August 17, 1994 .....App. 29

Testimony presented to the Department of Environmental Quality Engineering, pages 1 - 3, dated June 9, 1978 .....App. 50

Deposition of Graham Sherwood Giese, pages 1, 2, and 15 - 24, dated July 12, 1994 .....App. 53

Affidavit of Evelyn and Alfred Nelson, RE: Legal Expenses, dated August, 1994.....App. 62

310 Code of Massachusetts Regulations, excerpts from Sections 1.00 and 10.00.....App. 67

Correspondence from Nicholas B. Soutter to Department of Environmental Protection, RE: Nelson Variance Request, dated February 7, 1992 .....App. 76

Correspondence from Nicholas B. Soutter to Department of Environmental Protection, RE: Nelson Protest of $4,000 Fee and Notice of Eligibility for Variance, dated February 14, 1992..App. 80

Correspondence from Nicholas B. Soutter to Department of Environmental Protection, RE: Hicks Protest of $4,000 Fee and Notice of Eligibility for Variance, dated July 8, 1992.....App. 82

APPENDIX

TABLE OF CONTENTS – Continued

Page

Correspondence and Waterways Specifications Seawall Plan from Robert E. Weaver to Judy Perry, dated March 10, 1988 .....App. 86

Phase I Draft Environmental Impact Report, cover and pages 55 and 60, dated January, 1993....App. 89

Phase II Final Environmental Impact Report, cover and pages 7 and 46, dated May, 1994..App. 94

Respondents Answers to Interrogatories, dated December 20, 1991, *Nelson v. Commonwealth*, Case No. 90-1712.....App. 98

APPENDIX 1

September 20, 1993

Commissioner Daniel S. Greenbaum
Department of Environmental Protecton [sic]
One Winter Street
Boston, MA 02108
Phone: 292-5500

RE: Evelyn and Alfred Nelson
27 Morris Island Road, Chatham
File: SE 10-987

Lewis & Bernice Hicks
40 Dune Drive, Chatham
File: SE 10-1027

Deal Commissioner:

Request is hereby made for a variance from 310 C.M.R. 10:27 and related sections so as to permit construction of rock seawalls on the above-captioned properties in accordance with the specifications enclosed herewith (Ex.1).

These walls comply with the same specifications ordered for the 29 seawalls that have been allowed to petitioner's north since 1987, including the seawall used to protect the tennis court that immediately abuts the Nelson property.

As grounds for this request petitioners say:

1) Their properties were flooded in the October 30, 1991 northeast storm by 5 feet of water in their cellars.

2) Alternative measures:

a) Beach nourishment was tried by the Nelsons. It cost $21,000 to cover 100 feet and lasted 6 months.

The Corps of Engineers estimated that to cover a 1,300 foot segment in the same area would require $350,000 for 1 year with refills costing $175,000.

These numbers suggest that a year of beach nourishment will cost 200 to 270 dollars per foot and 100 to 130 dollars per foot thereafter.

Within 8 years nourishment will have cost as much as the proposed seawall.

Over the last 20 years The Corps of Engineers has spent 8 billion dollars trying to nourish 400 miles of United States beaches. Twenty-six percent of these projects have failed within 5 years. The per foot cost, using the Nelson's cost of sand, is over $5,000 per foot.

The Corps rejected beach nourishment as impracticable at Chatham. The Department characterized it as stop gap and expensive. It did not protect Mr. Nelson's house in the storm described in paragraph one.

b) The manufacturer of sandbags and sand tubes recommend that they not be used in wave tide environments exceeding 5 feet.

The Department of Waterways uses a design wave tide height of more than twice that for Chatham.

Sandbags cost $700 a foot to build and have an expected life of 1 to 3 years in Chatham (Mr. Nelson has sandbags).

c) Stilting or moving. There is no likelihood that the houses could be moved back or stilted so as to avoid

flooding. The area where Nelson and Hicks are located flooded to a depth of 300 feet in the last century when sea levels were lower.

4) Mitigating measures. We will comply with the same measures ordered for other seawall owners in Chatham.

5) There is an overriding public interest in allowing this variance because:

a) Twenty-nine other seawalls have been allowed in the 1 mile due north of Nelson and Hicks. Under the regulation these seawalls are presumed to cause erosion of the Nelson and Hicks properties.

b) Many of these walls were built with a waiver of the regulatory requirement that there be no "natural hill, mound or ridge of dune sand" on a property.

c) Mr. Nelson advanced the entire homeowners' share of the cost of an Environmental Impact Report in June of 1992.

This report was to cover the area from the Fish Pier to Morris Island and was to detail the environmental and adverse impacts of every seawall in place or proposed.

After Mr. Nelson's money had been received, discussion of the environmental and adverse impacts of the 29 seawalls was forbidden.

This order was illegal under the enabling legislation (Ex.2) but has been implemented. The EIR does not contain this information.

Neither Nelson or Hicks has any way to establish the environmental or adverse impact of these seawalls on their properties, making it impossible to argue the issue at a Departmental appeals hearing.

d) The EIR was broken into 2 phases. This was inconsistent with the original order and is forbidden by the regulations.

e) Messrs. Nelson and Hicks are in the Phase 2 area. They are required to discuss the environmental and adverse impacts of their proposed seawalls as is every Phase 2 owner.

f) It has now been 15 months since Mr. Nelson advanced the money needed for the EIR. Phase I is tentatively complete. There is no preliminary draft for Phase 2.

g) Seawalls on Nelson and Hicks would help protect Morris Island Road and Dune Drive.

h) Mr. Nelson has waited 4 years for a hearing on one appeal. Both Mr. Nelson and Mr. Hicks took appeals and requested variances in 1992. They were told that they would have to pay a fee of $4,000 each. Both declined to pay this fee but made it clear that they were pursuing the takings issue (Ex.3).

6) Takings claims and related litigation:

a) None of the 20 Chatham residents who have applied for seawalls has been denied. Seawalls have been allowed for residents' golf courses, tennis courts and parking lots.

b) Nine out of 21 nonresidents of Chatham who have applied for seawalls actually have them. Six others have lost their houses either because they were denied permits or the permit conditions added 40% to the cost of the seawall. These conditions were waived for residents.

c) Ten nonresidents have taken appeals, all commenced in 1988 and 1989. None has ever been given a hearing. Eight of these appeals are pending. Two of these appeals have been dismissed because the houses were destroyed.

d) The Department has refused to give appeals hearings to nonresidents because there is no EIR. It has permitted 29 seawalls without an EIR in the same time period. No resident in the EIR area has ever been denied a seawall or had to take an appeal.

e) The Department has ignored letters sent to it about this issue and has now been sued for discrimination by Nelson and Hicks.

f) Nelson and Hicks have also sued for an unconstitutional taking.

7) Likelihood of loss:

a) At present it is estimated that one storm will destroy the beach in front of Nelson and the next storm will cause the sandbags to fail. The third storm will flood or destroy the house. Hicks has more sand but no sandbags and the time table to destruction is the same.

b) Chatham has an average of 2 major storms a year. The life expectancy of these houses is 3 months to 3 years.

My Clients have no interest in pursuing litigation. They want the same seawalls already granted without an EIR and with a waiver of the dune definition already given their neighbors.

This is a fair and reasonable end to a problem that has vexed us all for 4 years.

Please grant their request.

Sincerely,

/s/ Nicholas B. Soutter
Nicholas B. Soutter

CERTIFICATE OF SERVICE

This is to certify that a true copy of the variance request and exhibits filed herewith has been served on the following individuals and entities on September 21, 1993:

Service in hand on:

Daniel S. Greenbaum
Department of Environmental Protection
One Winter Street
Boston, MA 02108

Madelyn Morris, Esq.
Assistant Attorney General
One Ashburton Place
Boston, MA 021089

Service by Federal Express on:

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1095 Route 6A
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W. Barnstable, MA 02668

Margaret Finn
DEP – DWW 8th Floor
One Winter Street
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100 Cambridge Street
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100 Cambridge Street
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Elizabeth Kouloheras
DEP – Lakeville
Route 105
Lakeville, MA 02347

Chatham Conservation Commission
549 Main Street
Chatham, MA 02633

Alfred and Evelyn Nelson
27 Morris Island Road
Chatham, MA 02633

Lewis and Bernice Hicks
40 Dune Drive
Chatham, MA 02633

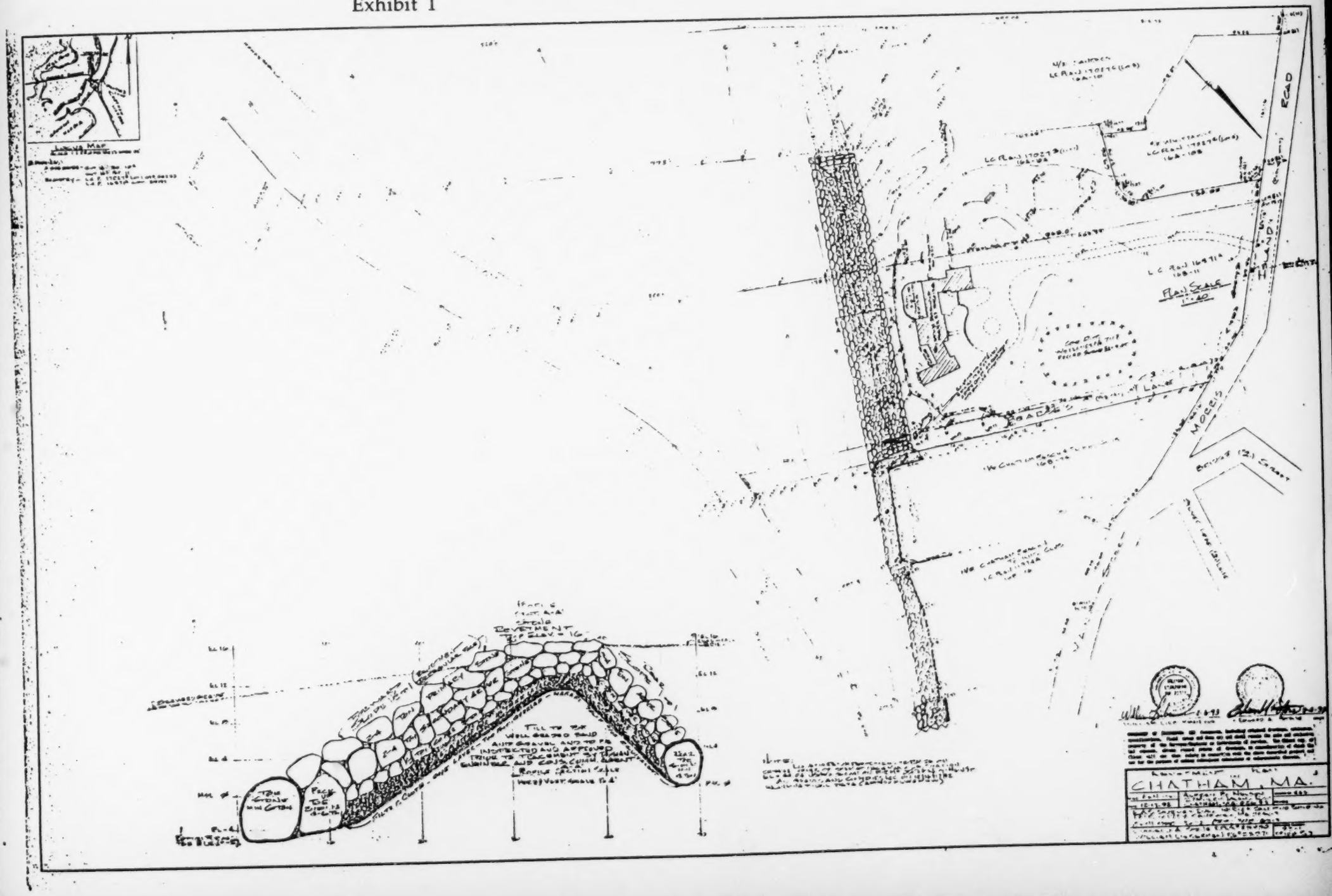
Coastal Engineering Co., Inc.
260 Cranberry Highway
Orleans, MA 02653

Carl Dierker, Esq.
DEP
One Winter Street
Boston, MA 02108

September 21, 1993

/s/ Paul S. McGovern
Paul S. McGovern

Exhibit 1



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App. 10

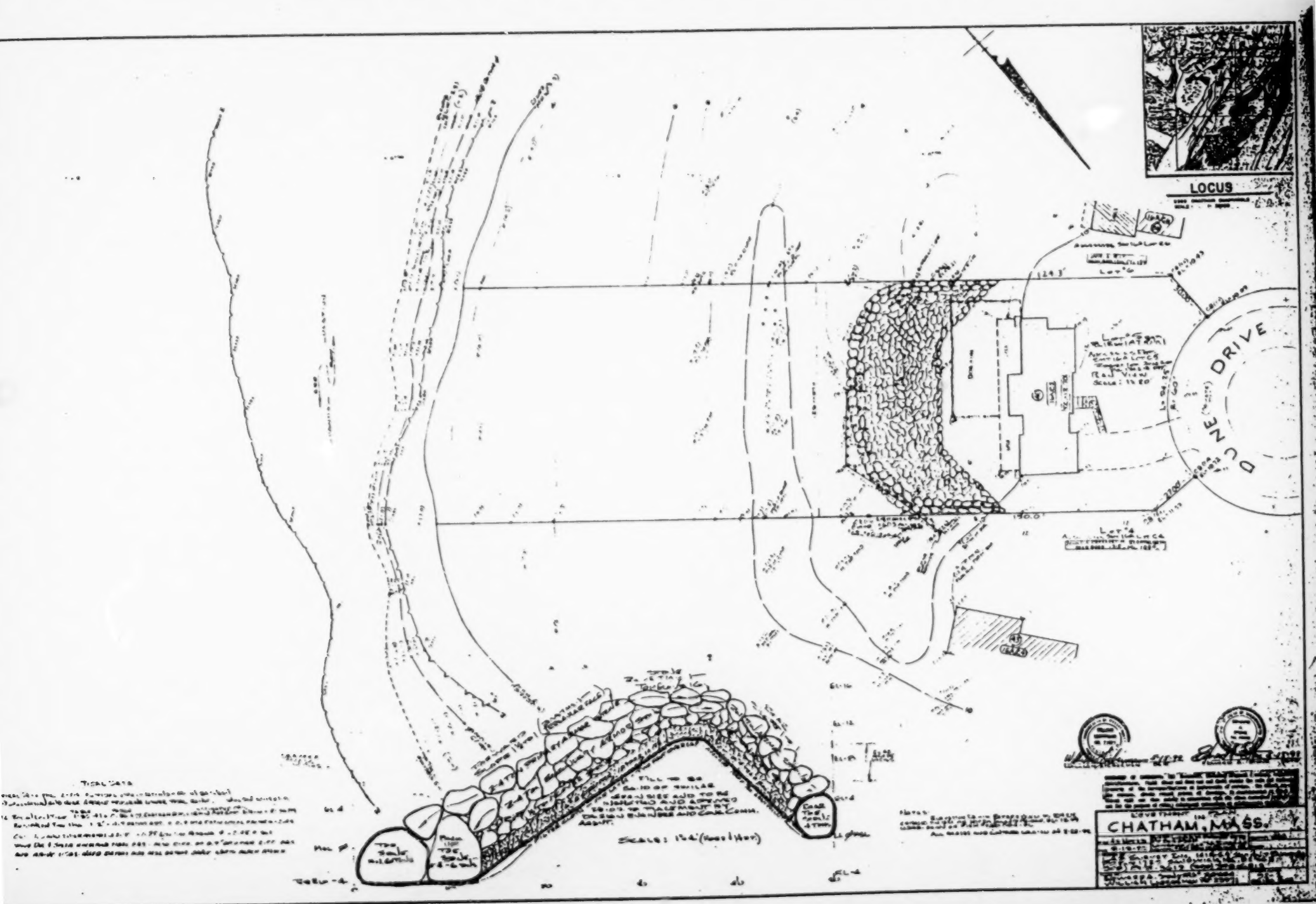

Exhibit 2

310 CMR: DEPARTMENT OF ENVIRONMENTAL PROTECTION

* * *

10.35: continued

(2) *Definitions.*
(a) *Anadromous Fish* means fish that enter fresh water from the ocean to spawn, such as alewives, shad and salmon.
(b) *Catadromous Fish* means fish that enter salt water from fresh water to spawn, such as eels.
(c) *Anadromous/Catadromous Fish Run* means that area within estuaries, ponds, streams, creeks, rivers, lakes or coastal waters, which is a spawning or feeding ground or passageway for anadromous or catadromous fish and which is identified by DMF or has been mapped on the Coastal Atlas of the Coastal Zone Management Program. Such fish runs shall include those areas which have historically served as fish runs and are either being restored or are planned to be restored at the time the Notice of Intent is filed. For the purposes of these regulations, such fish runs shall extend inland no further than the inland boundary of the coastal zone.

WHEN SUCH LAND OR BANK IS DETERMINED TO BE SIGNIFICANT TO THE PROTECTION OF MARINE FISHERIES, THE FOLLOWING REGULATIONS SHALL APPLY:

(3) Any project on such land or bank shall not have an adverse effect on the anadromous or catadromous fish run by:

(a) impeding or obstructing the migration of the fish, unless DMF has determined that such impeding or obstructing is acceptable, pursuant to its authority under M.G.L. c. 130.s. 19;

(b) changing the volume or rate of flow of water within the fish run; or
(c) impairing the capacity of spawning or nursery habitats necessary to sustain the various life stages of the fish.

(4) Unless otherwise allowed by DMF pursuant to M.G.L. c. 130. s. 19, dredging, disposal of dredged material or filling in a fish run shall be prohibited between March 15th and June 15th in any year.

(5) Notwithstanding the provisions of 310 CMR 10.35(3), no project may be permitted which will have any adverse effect on specified habit at sites of rare vertebrate or invertebrate species, as identified by procedures established under 310 CMR 10.37.

10.36: Variance

The Commissioner may waive the application of any regulation(s) in Part II of 310 CMR 10.00 when he finds, after opportunity for an adjudicatory hearing, that:

(1) there are no reasonable conditions or alternatives that would allow the project to proceed in compliance with the regulation(s);

(2) that mitigating measures are proposed that will allow the project to be conditioned so as to contribute to the protection of the interests identified in the Act; and

(3) that the variance is necessary to accommodate an overriding community, regional, state or national public interest; or that it is necessary to avoid an Order that so restricts the use of property as to constitute an unconstitutional taking without compensation.

Procedure.

A request for a variance shall be made in writing and shall include, at a minimum, the following information:

(a) a description of alternatives explored that would allow the project to proceed in compliance with the regulation(s) and an explanation of why each is unreasonable;
(b) a description of the mitigating measures to be used to contribute to the protection of the interests identified in the Act; and
(c) evidence that an overriding public interest is associated with the project which justifies waiver of the regulation(s), or evidence that the Superseding Order so restricts the use of the land that it constitutes an unconstitutional taking without compensation.

The request for a variance shall be sent to the Department by certified mail or hand delivered and a copy thereof shall at the same time be sent by certified mail or hand delivered to the conservation commission and any other parties.

After reviewing the information submitted with the request for a variance and any other information submitted by any party within twenty-one (21) days of the request, the Commissioner shall issue a decision as to whether to grant the request.

Within ten (10) days of the date of issuance of the Commissioner's decision on the variance, any person specified in 310 CMR 10.05(7)(j) may, according to the procedures specified in that section, request an adjudicatory hearing on the decision. At the adjudicatory hearing, the applicant has the burden of demonstrating that the

project meets the criteria necessary for a variance. Other parties to the adjudicatory hearing may introduce evidence either in favor of or opposing the request for a variance.

For projects in which all of the proposed work will be undertaken on land within the boundaries of one city or town, the request for a variance shall not be filed until the applicant first files a Notice of Intent with the Conservation Commission. The Commission shall review the project in accordance with the procedures set forth in Part I of 310 CMR 10.00 and issue an Order of Conditions consistent with Part II of 310 CMR 10.00. Within ten (10) days of the issuance of the Order of Conditions, the applicant may request the Department to issue a Superseding Order. The Department staff shall review the project in accordance with the procedures set forth in Part I of 310 CMR 10.00 and shall issue a Superseding Order consistent with the provisions of Part II of 310 CMR 10.00. Within ten (10) days of the issuance of the Superseding Order, the applicant may request an adjudicatory hearing on that order and/or a variance under 310 CMR 10.36 according to the procedure previously described.

For projects in which the proposed work will be undertaken on land within the boundaries of more than one city or town, the applicant may file a request for a variance directly with the Commissioner, with a copy to each affected conservation commission. If, after public notice, the Commissioner finds that a project meets the variance criteria, he shall specify which regulation(s) has been waived and what general requirements or conditions must be met to satisfy the above-stated variance criteria. The applicant shall then file a Notice of Intent

with the appropriate conservation commissions in accordance with the procedures contained in Part I of 310 CMR 10.00. The conservation commissions shall issue Orders of Conditions consistent with all provisions of Part II of 310 CMR 10.00 except those waived by the Commissioner and containing any additional conditions or requirements imposed by the Commissioner in the variance. The usual procedures contained in Part I of 310 CMR 10.00 for requesting Superseding Orders and adjudicatory hearings remain applicable.

Commentary

310 CMR 10.36, which provides that the Commissioner may waive the application of one or more of the regulations on the basis of overriding public benefit is intended to be employed only in rare and unusual cases. The provision authorizing a variance request directly to the Commissioner for projects on land within more than one city or town is intended to apply to projects that involve functionally related work in several contiguous towns (e.g., transportation and energy transmission facilities) and to provide for a single uniform determination concerning alternative locations and the other variance criteria.

10.37: Rare Species

Ninety (90) days or less prior to the filing of a Notice of Intent, the applicant shall notify the Massachusetts Natural Heritage and Endangered Species Program (hereinafter referred to as the Program) certified mail or hand

delivery (so that the Program will have received such notification prior to the filing of the

* * *

Exhibit 3

NICHOLAS B. SOUTTER
ATTORNEY AT LAW
ONE WASHINGTON STREET
WELLESLEY, MASSACHUSETTS 02181

617-237-6300

617-237-6360

NICHOLAS B. SOUTTER
PAUL S. MCGOVERN

AVOCAT
RECHTSANWALT
ABOGADO
ADVOGADO
ADBOKAT

February 7, 1992

BY HAND AND CERTIFIED MAIL

Wetland Protection Division
South East Regional Office
Department of Environmental Protection
Lakeville Hospital
Main Street
Lakeville, MA 02347

RE: Alfred B. Nelson, 27 Morris Island Road, Chatham, MA, File No. SE-10-987

Dear Sir or Madam:

The above-captioned petitioner hereby requests that the Department of Environmental Protection issue a Superceding Order to allow the above-captioned project.

The petitioner's situation is an emergency. His Chatham Harbor home is exposed to the direct force of storm-driven ocean waves. Further storm activity will destroy the home at any time.

Chatham Conservation Commission's denial of said project (Order of Conditions issued January 30, 1992) is inconsistent with the stated purpose of the Wetlands Protection Act (G.L. c. 131, sec. 40) and with provisions of 310 CMR 10.00 et seq. for reasons including but not limited to:

1. Proposed construction would take place in an area that is not significant to storm damage and flood control.

Chatham Harbor has experienced severe erosion since the 1987 breakthrough of the Chatham barrier beach. The erosion is caused by ocean waves. It is not controlled or mitigated by sediment located at or eroded from any Chatham Harbor property. Sediment eroded from the petitioner's property plays no role in flood-protecting outlying areas.

2. The project meets all applicable performance standards and would have no impact on outlying areas.

Sixty percent of the Chatham Harbor area is protected by DEP-approved seawalls. The petitioner requests a seawall of the approved design. Generally accepted scientific knowledge and experience at Chatham show that this design does not cause or accelerate erosion in outlying areas.

The petitioner requests a variance pursuant to 310 CMR 10.36:

1. The proposed project is the only reasonable alternative for the protection of interests identified by the Act (supra) including storm damage prevention and flood control.

In October, 1991, petitioner's property was exposed to storm-driven waves generating 35,000 foot pounts [sic] of force. Petitioner's DEP-approved sand nourishment project failed. Only the requested seawall can protect petitioner's property from this onslaught.

2. The proposed project includes mitigating measures that protect the interests of the Act.

The nature of coastal erosion in general and at Chatham, the manner in which seawalls commonly function, and the specific project design ensure that the proposed seawall will have no adverse impact on outlying areas.

3. A variance will further community interests and will prevent the further taking of the petitioner's property.

The project will protect low-lying, inland areas and public ways from destruction. All seawalls built in Chatham since 1987 have proven successful. All other attempts at flood control have failed.

Petitioner's project should be allowed as the wetland regulations (supra) upon which the Chatham Conservation Commission's based its denial of petitioner's proposal are unscientific, irrational, and unsuited to mandated legislative purpose. The regulations condemn petitioner's property to destruction without compensating public benefit.

Further grounds for petitioner's request are provided in memos, maps, affidavits, and technical article enclosed.

This request has been sent, certified mail, to the petitioner and the Chatham Conservation Commission.

The petitioner reserves the right to update and amend this request with appropriate notice.

Sincerely,

/s/ Nicholas B. Soutter

NBS/mps
Enclosures

cc. Chatham Conservation Commission
Madelyn Morris, Esq.
Bruce P. Gilmore, Esq.
Alfred Nelson
Louis Hicks

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RECHTSANWALT
ABOGADO
ADVOGADO
ADBOKAT

July 8, 1992

CERTIFIED MAIL

Wetlands Protection Division
South East Regional Office
Department of Environmental Protection
Lakeville Hospital
Main Street
Lakeville, MA 02347

RE: Lewis W. Hicks, III, 40 Dune Drive, Chatham, MA
File No. Se-101027

Dear Sir or Madam:

Enclosed please find a check in the amount of $50.00. Petitioner Lewis W. Hicks, III hereby requests that the Department of Environmental Protection issue a Superceding Order to allow the above-captioned seawall project. The project was denied by the Chatham Conservation Commission on July 2, 1992.

Petitioner's situation is an emergency. His Chatham-harbor home is exposed to the direct force of storm-

driven ocean waves. Further storm activity will destroy the home at any time.

Chatham Conseravation [sic] Commission's project denial is inconsistent with wetlands legislation (G.L. c. 131, sec. 40 and G.L. c. 130, sec. 105) and regulations (310 CMR 10.00 et seq.) for reasons including but not limited to:

1) The proposed construction would take place in an area that is not significant to storm damage and flood control. Chatham Harbor has experienced severe flooding that is not controlled or mitigated by sediment located at or eroded from any Chatham Harbor property.

2) The project meets all applicable peformance [sic] standards and would have no impact on outlying areas. Petitioner requests a seawall of the same design as those now protecting sixty percent of Chatham Harbor. Generally accepted scientific knowledge and experience at Chatham has shown that the design does not cause or accelerate erosion in outging [sic] areas.

Petitioner further states that he will not request a variance pursuant to 310 CMR 10.36. The fee may unconstitutionally condition his right to argue a variance. It is not in accordance with the Department's stated policies concerning the availability of review.

Petitioner reserves all rights to argue that a variance should be granted as this case involves an Order that "so restricts the use of the property as to constitute an unconditional taking without compensation":

1) The proposed project is the only reasonable alternative for the protection of interests identified by the Act

(supra). Waves of up to 35,000 foot pounds of force have struck petitioner's homes. Only seawalls can protect against such force. Petitioner's neighbor, Alfred Nelson, attempted beach nourishment. All sand was lost in a single storm.

2) The proposed project includes mitigating measures that protect the interests of the Act. The seawall is of the design approved by the Commonwealth for most of Chatham Harbor. The design protects the property it fronts without damaging outying [sic] areas.

3) A variance will further community interests and will prevent the further taking of petitioner's property. The project will protect adjacent low-lying areas and public ways from destruction. All seawalls built in Chatham since 1987 have proven successful. All other attempts at flood control have failed.

Petitioner's project should be approved as the wetland regulations (supra) upon which Chatham Conservation Commission based its denial are unscientific, irrational, and unsuited to mandated legislative purpose. The regulations condemn petitioner's property to destruction without a showing by the Department that the use to which petitioners wish to put their property constitutes a nuisance. The destruction of petitioner's property that can be expected by the Conservation Commission's project denial will have no compensating public benefit.

Given that petitioner's property is in imminent danger of destruction, request is made for a speedy determination.

This request has been sent, certified mail, to the petitioner and the Chatham Conservation Commission.

The petitioner reserves the right to update and amend this request with appropriate notice.

Sincerely,

/s/ Nicholas B. Soutter

NBS/mps

cc. Chatham Conservation Commission
Louis Hicks
Alfred Nelson
Madelyn Morris, Esq.

APPENDIX 2

VOL. I
PP. 1 – 52

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss. Superior Court
C.A. No. 89-881

****

JOAN WILSON, ET AL,

Plaintiffs

vs.

COMMONWEALTH OF MASSACHUSETTS, ET AL

Defendants

****

DEPOSITION OF GRAHAM SHERWOOD GIESE, taken on behalf of the Plaintiff, pursuant to the Massachusetts Rules of Civil Procedure, before Maryellen Coughlin, CSR/RPR, a Notary Public within and for the Commonwealth of Massachusetts, at the Law Offices of Nicholas B. Soutter, One Washington Street, Wellesley, Massachusetts, on Wednesday, July 12, 1994, commencing at 2:10 p.m.

HAROLD A. GABRIEL, CSR
15 Van Wart Path
Newton Centre, Mass. 02159
(617) 969-4791
FAX (617) 964-1321

APPEARANCES:

Nicholas B. Soutter, Esq.
One Washington Street
Wellesley, Massachusetts
Representing the Plaintiffs.

Kevin Steiling, Esq.
Assistant Attorney General
131 Tremont Street
Boston, Massachusetts 02111
Representing the Defendants.

PRESENT:

Vincent P. Maraventano
Karen Peterson

* * *

[p. 32] role in that because it appears to me that as the channel migrates to the south, each position of the channel is associated with an ebb tide delta, and that ebb tide delta becomes inactive as an ebb tide delta as it is left behind by the migrating channel, so that material is now available for transport back on to the beach, and one has to ask themselves why isn't there this large bar from the last cycle. It is not there because it was brought back in, so I think that may play an important role in rebuilding that beach.

Q Have you done, Doctor, any, I guess what we call them, isobathymetric studies of the distribution of sand about, say, a thousand feet off the barrier beach?

A No, I haven't done any studies off that barrier beach. Just a couple of years ago we did some bathymetric studies and also seismic studies which looked at the horizons beneath the sea floor along outer Cape Code from Provincetown down to Coast Guard

Beach, but I think our last profile was off Coast Guard Beach in Eastham.

Q With reference, Doctor, to the [p. 33] distinction drawn between dune and bank for purposes of seawall permitting, were you part of the group that recommended the regulations as they exist today, or not, if you remember?

A Yes, yes, I certainly was.

Q Can you tell us, sir, what the purpose was of that distinction, if you remember?

A Well, the group that actually did, the scientific group that did the recommendations did not recommend that they be, that there be a distinction in terms of seawall placement, that group recommended that there not be any seawalls allowed along any part of the shore which is providing sediment to the beach system through erosion, and that was that. The whole idea of their being some distinction between homes being on the coast which had been in place prior to 1978 AS opposed to homes built after 1978, '78 being the date of the publication of those regulations, was not part of the scientific group's recommendations. That distinction was made, as I understand it, by the, by the Commonwealth of Massachusetts in an effort to recognize the difficulties that homeowners who [p. 34] had homes on coastal banks prior to 1978 would experience as a result of the regulations.

MR. SOUTTER: I have no further questions, Doctor, thank you very much.

MR. STEILING: Can we just take a break?

(A break was taken at this time.)

Cross-examination By Mr. Steiling:

Q Doctor Giese, I just have a very few questions. I think I will be done very quickly. I just want to ask you about mainly one of the issues you were asked about by Mr. Soutter, and that is you were asked about an April 1987 address that you gave at Chatham High School, do you recall being asked about that?

A I recall the question.

Q Do you recall what you talked about in general?

A Well, yes, the reason for the meeting was to convey to the town what was known and what wasn't known and what we could say and what we couldn't say to provide guidance for the town's people concerning the situation which everyone

* * *

APPENDIX 3

August 17, 1994

M. Kathryn Sedor
Department of Environmental Protection
One Winter Street
Boston, MA 02108

RE: In the Matter of Alfred B. Nelson
Docket Nos. 92-140; 93-090
In the Matter of Lewis W. Hicks
Docket Nos. 92-152; 93-089

Deal Ms. Sedor:

I am writing to you to object to two misstatements of fact contained in the Department of Environmental Protection's Post Hearing Brief.

Page 9, paragraph C, line 6 states that Ole Madsen "admitted that all sand is not lost to deep water". Dr. Madsen's statement was that two-thirds of eroded sand returns to the beach. Dr. Madsen was not given a chance to explain whether that statement contradicted his previous sworn testimony that all sand is eventually lost in deep water. The affidavit was not put in evidence. I have enclosed a copy of the affidavit and call your attention to pages 1 and 2, paragraph 4, lines 3 and 4 where Dr. Madsen says that all eroded sand eventually goes out to sea.

In addition to violating the rule on impeachment of witnesses, taking Dr. Madsen's statement out of context seriously misrepresents known scientific fact. At a deposition attended by the Department, Dr. Graham Giese testified that substantially all sand eroded from the east

coast of Cape Cod is lost in deep water. I have enclosed the cover page and pages 21 and 22 from that deposition.

Dr. Giese was one of the two scientists who prepared the scientific testimony on which the Department's testimony is based (Applicants' Prefiled Testimony, Exhibit 32, Page 141).

Also from the Department of Environmental Protection's Post Hearing Brief page 3, lines 26 through 28: the DEIR did not conclude that high rates of erosion will begin with the break up of South Beach, but with the break up of the spit connecting South Beach. I have enclosed page 9 of the DEIR giving an estimate of when the spit will break up and enclosed pages 62 through 67 of the same document recommending immediate construction of a seawall to protect Little Beach (page 67).

I am satisfied that you will take these matters into consideration and do not require a formal statement on the record unless you feel that would be appropriate.

Thank you for your attention to this matter.

Sincerely,

/s/ Nicholas B. Soutter
Nicholas B. Soutter

NBS/nsd

cc: James Mahala
Vincent Maraventano
Bruce Gilmore

COMMONWEALTH OF MASSACHUSETTS

BARNSTABLE, SS SUPERIOR COURT
C.A. 90-1712

ALFRED NELSON, EVELYN NELSON,
LEWIS HICKS, III, AND BERNICE HICKS,
Plaintiffs

v.

COMMONWEALTH OF MASSACHUSETTS
AND TOWN OF CHATHAM,
Defendants

AFFIDAVIT OF OLE SECHER MADSEN, Sc.D.

Before me, the undersigned authority, personally appeared Ole Secher Madsen, who upon oath and after being duly sworn, deposes and says:

1) I am Ole Secher Madsen. I am a Professor at the Department of Civil Engineering at the Massachusetts Institute of Technology, Cambridge, Massachusetts. I am an expert in coastal sediment transport.

2) Given the ocean forces and conditions present at Chatham, only seawalls offer viable protection for plaintiffs' properties.

3) Seawalls will protect plaintiffs' properties without causing damage to outlying properties.

4) Every coastal state in the northeastern United States experiences a net loss of coastal sand as (1) more beaches are eroding than not and (2) all eroded sand eventually goes out to sea.

5) The apparent stability of the minority of beaches is achieved at the cost of erosion from the majority of

beaches. As eroding beaches become unable to put more sand into the system, the once "stable" beaches begin to erode.

6) Eroding sand moves down as it goes out to sea. When the same sand moves landward, it moves up along the slope of the beach. Even on a gentle slope (10 feet down per hundred feet offshore), one third less sand will return to the beach.

7) Massachusetts wetland regulations assume that the above-stated erosion pattern is a system of flood protection. This is incorrect. Massachusetts; coastal erosion sacrifices sand from eroding beaches without permanently protecting other areas.

8) Massachusetts wetland regulations make a distinction between "dune sand" and "coastal bank" which is extreme and unjustified. It is difficult to distinguish between the materials, particularly along the coast where they tend to be mixed. Any difference in their erosion-resisting properties is insignificant.

9) Making seawall construction dependent on the difference between "dune sand" and "coastal bank" produces gaps between seawalls in flood areas. This leads to "flanking" of the walls by water. Not only is this dangerous, but the dune sand is usually in such small quantities as to have no meaningful impact on flooding.

10) Seawalls do not cause erosion. They prevent sediment behind them from being eroded and they can interfere with the transport of sediment by littoral drift in a small way. Generally these problems are minor because

without the wall flooding will overcome any sand the wall might have blocked.

11) A properly designed and constructed seawall can, if properly maintained, last several centuries or more.

Signed under the pains and penalties of perjury.

/s/ Ole Secher Madsen
Ole Secher Madsen

COMMONWEALTH OF VIRGINIA

York, ss. Date: 12 November 1991

Subscribed and sworn to before me, the undersigned Notary Public.

/s/ Sarah R. Hamnrick
Notary Public

Comm. Exp.: 28 February 1994

VOL. I
PP. 1 – 52

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss. Superior Court
C.A. No. 89-881

****

JOAN WILSON, ET AL,

Plaintiffs

vs.

COMMONWEALTH OF MASSACHUSETTS, ET AL

Defendants

****

DEPOSITION OF GRAHAM SHERWOOD GIESE, taken on behalf of the Plaintiff, pursuant to the Massachusetts Rules of Civil Procedure, before Maryellen Coughlin, CSR/RPR, a Notary Public within and for the Commonwealth of Massachusetts, at the Law Offices of Nicholas B. Soutter, One Washington Street, Wellesley, Massachusetts, on Wednesday, July 12, 1994, commencing at 2:10 p.m.

HAROLD A. GABRIEL, CSR
15 Van Wart Path
Newton Centre, Mass. 02159
(617) 969-4791
FAX (617) 964-1321

APPEARANCES:

Nicholas B. Soutter, Esq.
One Washington Street
Wellesley, Massachusetts
Representing the Plaintiffs.

Kevin Steiling, Esq.
Assistant Attorney General
131 Tremont Street
Boston, Massachusetts 02111
Representing the Defendants.

PRESENT:
Vincent P. Maraventano
Karen Peterson

* * *

[p. 21] erosion.

Q Could you give us a range of the erosion rate as you estimated it at that time in late 1987?

A Yes, I will estimate that without reference to my notes which would do a little better, but I think it was about 50 feet. I think 50 feet had been eroded by, in December, by December sometime, but I'm not sure.

Q Sir, do you recall, do you have an opinion as to when erosion became noticeable or acute in the area of the Wilson house in 1987?

MR. STEILING: I'm going to just object to the phrase acute. If you can define acute more.

Q When was there perceptible erosion in the area of the Wilson House, if you know?

A I really don't know. I guess I was first aware of it in November but –

Q That's fine. Let me ask you, Doctor Giese, whether it is a fair generalization that the sand that is eroded from the east coast of Cape Code eventually all ends up in water at depths of 30 feet or greater?

[p. 22] A Eventually I would say that would be about right.

Q If you gave it a hundred years, that's where most of it is going to end up?

A The hundred years is a little bit tricky. I am thinking of the part that goes to, goes north to Provincetown. The outer shore of Provincetown is eroding, is building in net. However, most of the sediment that moves along the outer shore of Provincetown that gets as far as Race Point is deposited into deep water, because Provincetown hook extends out into a sea floor that's 200 feet deep at Race Point, and so for a little bit of accretion of the Provincetown hook to occur, there must be a great deal of deposition in deep water, because most of the volume of the Provincetown hook is under water. So I would say yes considering that, that, even though the Provincetown's hook is building out at the shoreline and that's not ten meters of water. But, still, I would say most of it would.

Q Let me read you a statement, sir, and this comes from the Provincetown's Center for Coastal Studies, testimony offered in support of

* * *

II. RESPONSE TO THE CAPE COD COMMISSION'S COMMENT LETTER DATED 21 JANUARY 1994

1. COMMENT pg. 2: Although there is clearly uncertainty involved, the DEIR should clarify projected time frames where possible. For example, p. 41 indicates that massive erosion in the Little Beach area will occur over the next several years. Earlier (p. 20) the DEIR states that South Beach is expected to begin to break up in 10 to 20 years and p. 21 cites a time frame for expected South Beach changes of 50 to 80 years.

REPLY: We apologize for the potential confusion regarding the barrier beach/inlet processes that will occur over the next several decades. The following timeline may be helpful:

TIME (years)	ACTIVITY
2-10	Spit connecting South Beach to mainland is breached and begins to break up
10-20	South Beach begins breaking up
50-80	Remnant shoals (formerly South Beach) attach to Morris Island

2. COMMENT pg. 2: The subcommittee has been provided with extensive information that indicates that the Little Beach area was previously a barrier spit/barrier beach. This new information is in direct contrast to the conclusions provided in the DEIR with regard to the "historic fill" areas on Little Beach. This information should be reviewed by the consultants and modifications to the DEIR made where necessary. This information is

important to the distinctions that the DEIR attempts to make between dune and bank.

REPLY: Please see reply to Mr. Doe's comments.

3. COMMENT pg. 2: The DEIR rejects the use of "Sta-beach" and similar alternatives based on a lack of experience with these technologies in areas with erosion rates of 100'/year or more (p. 61). Does the DEIR suggest that the study area is extraordinary, undergoing 100'/year of erosion? This seems contradicted by a statement later in the DEIR citing a "high" erosion rate at Blank-Brountas of 3.3' year. These numbers need further clarification.

REPLY: Please see reply to MCZM comments concerning Sta-beach. The future erosion potential at Little Beach may be 100'/year or more. The use of terms such as "high" are relative and often produce apparent contradictions when taken out of context. The erosion rates discussed for the Little Beach area refer to

* * *

XI. RECOMMENDED MANAGEMENT PLANS

Recommended Plans

The recommended plans were developed to implement the following management goals:

- Preserve the natural system function
- Preserve public access for health and safety
- Maintain economic viability of the region

Three plans are discussed below. Although the plans are presented as three separate plans, they were developed as integrated parts of one plan. Once the plan was developed, it was segmented to conform with other sections of the EIR. Additionally, the plan for Little Beach has been divided into sections to facilitate implementation and to ensure that all parts of the plan are needed before they are implemented. Furthermore, it is the intent of the plan that each of the Little Beach phases be completed at one time – the Little Beach plan is not intended to be implemented in a piece-metal fashion.

Recommendations for Little Beach

The alternatives section identified many potential erosion protection methods which have been incorporated into the recommended plans for the study area. Most of the shoreline between Bearse's Lane and the southern end of Morris Island is going to experience attack from open ocean waves within the next 5-30 years. The breakup of South Beach and the migration of New Inlet to the south will be episodic and occur over irregular spatial and temporal scales. These scales will be dependent upon the frequency and intensity of incident storms. In general, we recommend that a low revetment be constructed behind the existing dune immediately seaward of the existing houses for the Little Beach area. The elevation of the revetment should be no higher than the existing landform elevation or 10-12 ft NGVD, whichever is greater. We have made our elevation recommendations for the proposed revetment based on the existing Town topographic information. A detailed topographic survey of the entire Little Beach area was beyond the scope of

this project. Our intent in making this recommendation is that the revetment should make smooth transitions from one property to the next if there are changes in elevations. The top of the proposed revetment should *not* be stair-stepped when transitioning elevations.

When completed, the revetment will extend from Bearse's Lane to the Horne property. A sand berm is recommended for the area between the last Horne property and Outermost Harbor Marine. The sand berm will have a lined channel or culvert(s) through the structure to allow storm surge flowing from Stage Harbor to relax into the Chatham Harbor region. The property immediately to the south of Outermost Harbor Marine is presently protected by shore protection structures. The other low-lying properties between the Morris Island Dike and Outermost Harbor Marine are not protected and the shoreline in this region has exhibited some erosional tendencies in the recent months. We are not proposing protection for this area since we anticipate that this area will be protected by infilling of the marsh and by the welding of South Beach to the mainland. This should not be construed as a prohibition to shore protection structures in this region. If shore protection becomes necessary in the area south of Outermost Harbor Marine, they should be permitted. However, a shore protection scheme should be developed which has the minimum impact on the resource area but still provides protection for the houses.

The Little Beach revetment will serve as an anchor to prevent erosion of the land form and as an anchor for a series of groins which will be constructed seaward of the revetment at varying lengths (Fig. XI-1). A dune will be

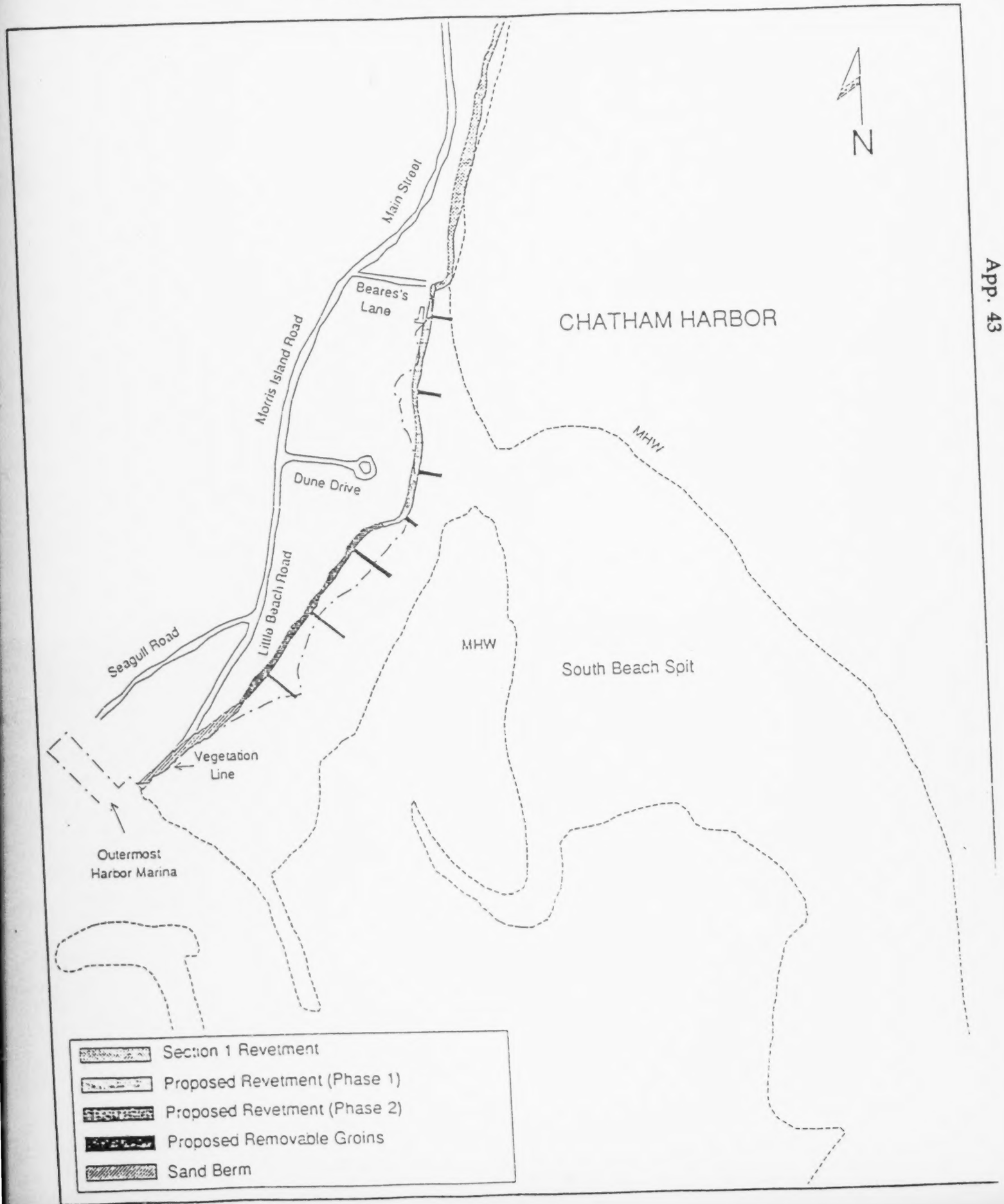
constructed over the groins and any low areas immediately seaward of the revetment. The dune will be constructed from clean, beach-compatible sand and planted with beach grass or other indigenous species to hold the dune in place. A sand berm will be constructed from the southern end of the Phase 2 revetment to Outermost Harbor Marine to an elevation between 9 and 10 ft NGVD. This sand berm between will require periodic maintenance due to possible storm damage, and the berm should also be vegetated. Repair and maintenance of the berm is projected to be required on an annual basis. The intent of the sand berm is to provide a measure of protection while still allowing flood waters to relax. Therefore, if the sand berm is damaged or destroyed frequently, other protection options for this area should be considered.

As we have stated, migration of New Inlet and/or the breaching of South Beach will occur episodically. Therefore, it is not possible to determine accurately when New Inlet will begin its next large move to the south. Presently, New Inlet is migrating to the south; however, the rates are low. These low rates of migration will continue as South Beach continues to be lowered in elevation by overwashing and decreased in width by erosion. This will continue until conditions are favorable for the entrance channel to move rapidly to the south. The intent of the plan is to preserve and enhance the natural protective abilities of the beach and dune resources presently in the Little Beach area. Therefore, the first section of the revetment, see Figure XI-1 (Phase 1), and the set of groins fronting this area should be constructed immediately. As the inlet moves to the south or as South Beach becomes

overwashed, the revetment should be extended and groins added as shown on Figure XI-1 (Phase 2). We would like to emphasize that the purpose of the groins is to help slow the transport of sand in the longshore direction. This will help preserve the dunes and beach which form the primary protection from the erosive action of waves. Therefore, it is important that the construction of the revetment and the groins should occur prior to the destruction of the fronting dunes.

The first section of the revetment and the first four groins should be constructed immediately. This will result in the construction of approximately 1,400

PROPOSED EIR 2
EROSION MITIGATION



App. 43

linear feet of revetment extending from Bearse's Lane to the Rice property. Additionally, there will be 3 to 4 groins constructed extending from the revetment 100 to 200 ft seaward. A dune will be constructed over the groins and any low areas immediately seaward of the revetment. The dune will be constructed from clean, beach-compatible sand and planted with beach grass or other indigenous species to hold the dune in place. This will eliminate low areas and minimize the potential for erosion from current flow once the dunes are overtopped or eroded.

The additional sections of the revetment should be constructed when the inlet migrates to the south so that the waves directly impact the shoreline and/or there is a breach in South Beach such that waves are transmitted through the breach on a regular basis. The purpose of this trigger condition is to ensure that the revetment and the groins are constructed and are functioning prior to the erosion of the beach and dune shoreward of the design length of the groins.

The revetment should be constructed of stone and should be designed to meet accepted coastal engineering standards. The recommended slope for the structure is 1 ft horizontal to 2 ft vertical. However, slopes may vary to meet design considerations. Additionally, the revetment should be designed to have appropriate toe protection to protect the revetment from potential wave and current scour. The groins should be constructed from either wood or steel sheet pile. The sheet pile construction of the groins will make them temporary allowing sections to be removed as needed. The groins will be kept filled to entrapment (or removed in sections) to ensure the interruption to littoral flow is minimized. Ultimately the

groins will be completely removed once North Beach migrates to the south and once again provides protection to this area. A more detailed description of when the groins should be removed is contained in the following section.

The intent of the recommended plan is to slow the longshore erosion of the beach and dunes that will occur as the inlet moves to the south. The revetment will stop erosion seaward of the houses and provide protection to the landform. Erosion of the dunes will occur on temporal and spatial scales similar to past erosion sequences experienced to the north which occurred immediately after the formation of New Inlet. The area to the north experienced episodic erosion of the beach and dunes on the scale of 30 ft or more per storm and as much as 300 ft in a single storm season. The erosion was primarily in the longshore direction. The groins will slow down the longshore erosion but not completely eliminate it. Keeping the groins filled to entrapment will ensure that sand is bypassed and is continually transported in the longshore direction. In order to ensure that the groins will remain filled to entrapment, they should either be shortened in sections as erosion occurs or artificially filled with sand. Once North Beach migrates south and the Little Beach area is no longer subjected to direct wave attack, the groins should be removed and the beach restored. The groin field could be used as a possible harbor dredge disposal area. This would help maintain the beach and the dune system, ensure the groins remain filled to entrapment, and provide a disposal area that is close to the site of dredging.

A groin/jetty should be constructed immediately to the north of Outermost Harbor Marine. This groin will trap longshore sediment which would transported into the marina entrance channel and onto the marsh fronting Morris Island Dike. The groin will form an impoundment area immediately to the north. This area will provide additional protection to the structures located adjacent to the marina and to the low-lying ball field area. Additionally, the beach elevation and dunes in the groin impoundment area could be artificially raised in elevation by using this area to dispose of dredged material. However, the elevation of this area should be carefully controlled to allow for the natural relaxation of floodwaters through the area immediately north of the marina.

The following specific recommendations are made for the Little Beach area. Both the recommended plan and mitigation measures are summarized below.

LITTLE BEACH RECOMMENDATIONS

General Recommendations

- Engineering plans should be completed for the project and the permits obtained for construction of revetment and groins.

- A dune should be constructed in any low areas that exist between the revetment and the existing dune line. This dune will be used to increase the volume of the existing dune. The dune should be composed of beach compatible sand and planted with beach grass or other indigenous plants.

- Sand fencing should be permitted to encourage future dune growth and to help stabilize the existing dunes.
- The Phase 1 and Phase 2 structures must be continuous. Discontinuous sections of revetment should not be permitted. If there is a gap in the protection, the integrity of the entire section will be compromised.
- The Conservation Commission will be responsible for determining when the trigger mechanisms have been met. The Conservation Commission should use local knowledge of the area and experience gained from erosion in the Phase 1 area to ensure the objectives of this management plan are accomplished.
- While the structure would not be below MHW if it is constructed as recommended, a Chapter 91 permit application should be filed as part of the permit package.

Phase 1 Recommendations

- Phase 1 (the first section) of the project should be constructed immediately. The first phase area extends from Bearse's Lane to the Rice property. Low areas extending from the revetment to the end of the groins should be back-filled with beach-compatible material and planted with beach grass. Construction will require the excavation of existing dune. Therefore, once the construction is completed, the groin should be completely covered over and planted. The groins should be no higher than 6 ft NGVD and should extend to a depth of 3.0 ft below MLW. The permit should be worded to ensure that the sand

used is beach-compatible because this material will ultimately be transported in the longshore direction and deposited on downdrift beaches. In addition, the revetments will be exposed to open ocean waves and should be designed accordingly.

Phase 2 Recommendations

- Phase 2 (additional sections of the groins and revetments) should be permitted once the trigger mechanisms are met. The additional sections of the revetment should be constructed when the inlet migrates to the south so that the waves directly impact the shoreline and/or there is a breach in South Beach such that waves are transmitted through the breach on a regular basis. The purpose of the trigger is to ensure that the revetment and the groins are constructed and are functioning prior to the erosion of the beach and dune shoreward of the Phase 2 revetment and groins.

- Engineering plans should be completed for the project and permits obtained for construction of a groin/jetty located immediately north of Outermost Harbor Marine. The groin should be constructed as part of Phase 2. However, this jetty could be constructed before Phase 2 if the Conservation Commission deems it would provide protection (increasing the beach and dune volume north of the groin/jetty) to the Little Beach area.

- The sand berm for the area between the Horne property and Outermost Harbor Marine should be permitted and constructed

once the trigger mechanism for the Phase 2 has been exceeded. The intent of the berm is to provide protection while still providing a relaxation point for flood waters entering from Stage Harbor. If the system does not evolve as outlined in the EIR, then this portion of the plan may be modified to accomplish the intent of the structure. If the berm requires continuous maintenance due to frequent storm damage, a hard structure should be considered along this area

APPENDIX 4

Testimony presented to the Department of Environmental Quality Engineering concerning the proposed additions and amendments to the existing regulations promulgated under the Wetlands Protection Act, G.L. c. 131, s. 40

Submitted

June 9, 1978

THE COMMONWEALTH OF MASSACHUSETTS

EXECUTIVE OFFICE OF ENVIRONMENTAL AFFAIRS

100 CAMBRIDGE STREET

BOSTON, MASSACHUSETTS 02202

[Logo]

COASTAL ZONE
MANAGEMENT

June 9, 1978

David Standley, Commissioner
Department of Environmental
Quality Engineering
100 Cambridge Street
Boston, Massachusetts 02202

Dear Commissioner Standley:

The enclosed material was prepared by the Massachusetts Coastal Zone Management Program and by the Provincetown Center for Coastal Studies and is presented as written testimony submitted to the Department of Environmental Quality Engineering concerning the proposed additions and amendments to the existing regulations promulgated under the Wetlands Protection Act, G.L. c. 131, s. 40.

Sincerely,

/s/ Lester B. Smith, Jr.
Lester B. Smith
Marine Geologist

/s/ Gary Clayton
Gary Clayton,
Marine Biologist

LBS:kc
enclosures

PROVINCETOWN CENTER FOR COASTAL STUDIES
P.O. Box 826/Provincetown, Massachusetts 02657/
(617) 487-3622

June 8, 1978

Department of Environmental Quality Engineering
100 Cambridge Street
Boston, Massachusetts 02202

Dear Sir or Madam:

The enclosed material was prepared by the Provincetown Center for Coastal Studies and by the Massachusetts Office of Coastal Zone Management and is presented as written testimony submitted to the Department of Environmental Quality Engineering concerning the proposed additions and amendments to the existing regulations promulgated under the Wetlands Protection Act, MGLA, Ch-131, Sec. 40.

This material forms the scientific basis for the proposed additions and amendments.

The preparation of this material was performed under contract awarded by the Massachusetts Executive Office of Environmental Affairs.

Sincerely,

/s/ Charles A. Mayo III
Charles A. Mayo III
Associate Scientist

/s/ Graham S. Giese
Graham S. Giese
Associate Scientist

cc/Ofc

VOL. I
PP. 1-52

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss. Superior Court
C.A. No. 89-881

JOAN WILSON, ET AL,
Plaintiffs

vs.

COMMONWEALTH OF MASSACHUSETTS, ET AL
Defendants

DEPOSITION OF GRAHAM SHERWOOD GIESE, taken on behalf of the Plaintiff, pursuant to the Massachusetts Rules of Civil Procedure, before Maryellen Coughlin, CSR/RPR, a Notary Public within and for the Commonwealth of Massachusetts, at the Law Offices of Nicholas B. Soutter, One Washington Street, Wellesley, Massachusetts, on Wednesday, July 12, 1994, commencing at 2:10 p.m.

HAROLD A. GABRIEL, CSR
15 Van Wart Path
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(617) 969-4791
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APPEARANCES:

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One Washington Street
Wellesley, Massachusetts
Representing the Plaintiffs.

Kevin Steiling, Esq.
Assistant Attorney General
131 Tremont Street
Boston, Massachusetts 02111
Representing the Defendants.

PRESENT:

Vincent P. Maraventano
Karen Peterson

* * *

[p. 15] A I don't recall, but I wouldn't be surprised. The reason I say that is that in my notebook – I would have answered this differently if I hadn't reviewed my notebooks, but in my notebook I see a sketch on one of the pages where there is some, what looks to me to be sandbags drawn, and I'm not sure whether it was for the Wilsons, at the Wilsons or not.

Q Doctor Giese, carrying you back earlier to the years 1977, '78, did you at that time, sir, participate in the drafting of the present seawall regulations, 310 CMR, those sections with concern of coastal wetlands?

A Yes, yes, I helped with that.

Q And would you describe to us, sir, what your function was at that time and what you did?

A Well, I was an advisor to the, I guess it was the Executive Office of Environmental Affairs. My own direct

relationship was with the office of Coastal Zone Management, and I worked cooperatively with a Coastal Zone geologist at the office of Coastal Zone Management whose name was Lester Smith in designing regulations for storm damage prevention and flood control.

[p. 16] Q And did you, sir, sometime in 1978 coauthor a work designated as testimony in support of those regulations?

A Yes, yes, I did.

Q And that was in your capacity at Provincetown Center for Coastal Studies?

A That is correct.

Q And let me ask you, Doctor Giese, carrying you back to the Wilson property for the moment, did you, sir, examine that property to see whether it was on dune or on bank as defined in the regulations?

A I can't remember doing that, but I must – I can't imagine not having noted that. I remember that a colleague of mine named John Millerman had been involved either with the Wilsons or some neighbor of theirs with reference to that matter, but I do remember it was something that I didn't concern myself very much with.

Q And would you tell us, sir, whether that distinction as applied to the Wilson lot was important or not important in your opinion?

A Well, I didn't think it was important as [p. 17] to the erosion of their property. I thought it would erode whether it was dune or whether it was bank, but it

certainly was important relative to their obtaining permission to build a permanent seawall on their property.

Q Did you ever speak to Doctor Millerman, Doctor Giese, as to what he found on that property?

A I believe I did. In thinking about that, I believe that Millerman found that the Wilson house was on a dune but there was glacial material below the dune, and I can't remember at what elevation, but I think it was pretty low. By that I mean pretty close to sea level, but I don't remember.

Q And in your opinion, sir, as a general matter, what is the difference between dune and bank for purposes of allowing a seawall?

A Well, to answer that I think I have to say what is the difference between a dune and a bank geologically. The bank, as we know them on Cape Cod, is a deposit of sediment which deposit was laid down some 12 to 15,000 years ago by the melting of a glacial ice. A dune is made of [p. 18] material that had been relatively recently transported by the first wave action and then wind action to be deposited in recent times. The difference between them as far as protecting them from erosion as far as the regulations are concerned is that if a home was in place prior to 1978, the homeowner has reference to regulations which say that if all other options have been used up and they are on a coastal bank, then they can apply for permission to build a seawall. Whereas if that home was on a coastal dune, even though it was in place before 1978, they would not be able to apply for permission to build a seawall.

Q Let me ask you, Doctor Giese, whether we can agree that the major or sole source of dune sand is the erosion of coastal bank?

A Yes, yes, that's right, it is.

Q And would it be fair to say –

A Excuse me, here, in Cape Cod?

Q Yes, I'm talking about the outer Cape or eastern shore of Cape Cod.

A Right, yes, yes.

Q And do you know, sir, whether you or [p. 19] anybody to your knowledge ever studied the number of seawalls that there are on the Cape, that there were on Cape Cod in 1978?

A No, I don't think anybody has, that should be done.

Q Do you think anybody has studied the number of seawalls on the Cape as of the moment, present date, July of 1994?

A I don't know that they have.

Q It is just your knowledge, sir.

A I don't know they have, excuse me.

(Discussion off the record.)

Q Have you or anybody that you know of done a study as to how many seawalls might eventually be licensed under the exception for seawalls on bank where there are pre1978 houses?

A I don't know of it. I haven't. I have not.

Q Would you agree that that would be a useful number to have?

A I think it would.

Q Could we agree that if you put a seawall on bank that that's going to deny the sand in that bank to the formation of future dunes and [p. 20] beaches?

A Yes, it would.

Q Could we agree, sir, that if Mrs. Wilson's neighbors to her immediate north got seawalls that those might deny her dune sand?

A Yes, yes.

Q And can we agree that that dune sand would have in fact, might have in fact helped protect her property?

A It would I think very likely reduce the rate of erosion.

Q Did you form any opinion, sir, in October, November – well, whenever you were on the Wilson property, as to what the rate of erosion was on that property at that time?

A Yes. Let's see, I did. I made a measurement in November, and Ron gave me some measurements that he had made or told me of what an earlier distance to the scarp had been. I don't know that I really came up with an erosion rate until December of that year, 1987, because I did measure it in November, and I think I measured it

again in December. I'm not sure of the dates, but I did get some ideas of the [p. 21] erosion.

Q Could you give us a range of the erosion rate as you estimated it at that time in late 1987?

A Yes, I will estimate that without reference to my notes which would do a little better, but I think it was about 50 feet. I think 50 feet had been eroded by, in December, by December sometime, but I'm not sure.

Q Sir, do you recall, do you have an opinion as to when erosion became noticeable or acute in the area of the Wilson house in 1987?

MR. STEILING: I'm going to just object to the phrase acute. If you can define acute more.

Q When was there perceptible erosion in the area of the Wilson house, if you know?

A I really don't know. I guess I was first aware of it in November but –

Q That's fine. Let me ask you, Doctor Giese, whether it is a fair generalization that the sand that is eroded from the east coast of Cape Cod eventually all ends up in water at depths of 30 feet or greater?

[p. 22] A Eventually I would say that would be about right.

Q If you gave it a hundred years, that's where most of it is going to end up?

A The hundred years is a little bit tricky. I am thinking of the part that goes to, goes north to Provincetown. The outer shore of Provincetown is eroding, is

building in net. However, most of the sediment that moves along the outer shore of Provincetown that gets as far as Race Point is deposited into deep water, because Provincetown hook extends out into a sea floor that's 200 feet deep at Race Point, and so for a little bit of accretion of the Provincetown hook to occur, there must be a great deal of deposition in deep water, because most of the volume of the Provincetown hook is under water. So I would say yes considering that, that, even though the Provincetown's hook is building out at the shoreline and that's not ten meters of water, But, still, I would say most of it would.

Q Let me read you a statement, sir, and this comes from the Provincetown's Center for Coastal Studies, testimony offered in support of [p. 23] the regulation. I will read this statement. If you are not comfortable with it, I will give you the report, but I would just like you to comment on it?

A Sure.

Q Quote, were the erosion of the cliffs along the east coast of Cape Cod to be prevented, and this is a second quote, the beaches would disappear completely in 86 years and probably a lot sooner, and then the reference is in parentheses, Zeigler, et al, 1964, and I'm just wondering if you could comment on that, sir?

A I can. I am part of the et al.

Q I thought you were.

MR. STEILING: Can you give me the page?

MR. SOUTTER: Page 21.

A That's right, and what we did was to measure the rate of erosion of the cliffs, the glacial cliffs of outer Cape Cod and come up with an average long-term rate of retreat, which I think was 2.6 feet per year, and using that together with the height of the cliffs and appropriate consideration for the erosion of [p. 24] glacial material that was under water, the submarine component of the eroded surface, ended up with a volume material that went into transport per year. Then we divided into that that part of the beach deposit or beach and near shore deposits which were, which came from that material. I didn't say that very well. Part of the material that's eroded fell into the size, sediment size compatible with material that was on the beach, and so only a part of the volume which went into transport each year was beach size sand, but we were able to calculate that volume of beach size sand that went into transport each year, and so we divided the volume of the beach by the volume of material that went into the beach each year of that proper size and came up with, I think, 86 years.

Q And part of the significance, sir, of the sediment size is if the sediment grain eroded is compatible with the existing beach sediment grain, it is more likely to remain in the area of that beach, isn't that so?

A That is.

Q And the sediment size that is greater or

* * *

APPENDIX 5

COMMONWEALTH OF MASSACHUSETTS

APPELLATE TAX BOARD

NO. 203920, 204829
204830,
204831, 203921
203922, 204832

BERMINGHAM, DOGGETT, HALLOCK, HICKS, HORNE, NELSON, NELSON, AND RICE
Appellants

v.

BOARD OF ASSESSORS, TOWN OF CHATHAM
Appellee

AFFIDAVIT OF EVELYN AND ALFRED NELSON

Then personally appeared Evelyn and Alfred Nelson and swore that the following is true on personal knowledge and belief.

1) We have a house at 27 Morris Island Road, Chatham, Massachusetts. We are an [sic] appellants in the above-captioned matter.

2) Our house is on the shore of Chatham Harbor. It fronts the breach in the barrier beach. We have lost over two hundred feet of beach since 1989. We once lost fifty feet of beach in a day.

3) In April and May, 1991, we placed more than 3,100 cubic feet of sand at the high watermark of our property pursuant to permission granted by the Chatham Conservation Commission for flood control. This "beach

nourishment" cost in excess of $24,000. The "Halloween" Nor'easter [sic] of October, 1991 removed all of said sand from our property. Our house flooded, and suffered approximately $100,000.00 in damage. After the storm, the high water mark was approximately twenty feet from the house.

4) The storm flooded our house, the house of Bernice and Lewis Hicks, and the homes of several other appellants. The storm threatened all appellants with flooding and erosion. The storm did not reach hurricane force.

5) Our house remained approximately twenty feet from the sea through the winter of 1991-2 and the following spring, when erosion returned. We then added a sandbag seawall. Sand has built up since. The Phase II Environmental Impact Report for our section of the Chatham coast and representatives of the Commonwealth including James Mahala of the Department of Environmental Protection agree that this buildup is temporary and will not protect our house.

6) Our expenditures to date for flood control include $30,000 for beach nourishment and $104,000 for a sandbag seawall. The sand lasted six months (supra) and is not recommended for high energy storm areas such as Chatham. The manufacturer of the sandbags does not recommend their use where waves are higher than five feet. In Chatham, waves higher than this are common. The bags have a life expectancy of three years and are easily vandalized. In late May 1994, a state expert estimated that the life expectancy of the bags is two to ten years.

7) We are parties with Bernice and Lewis Hicks (also appellants in this matter) in administrative appeals and litigation involving the Commonwealth of Massachusetts and the Town of Chatham. The administrative appeal concerns denial of seawall permits. The litigation concerns said denial and the constitutionality of state and municipal wetlands regulations.

8) The administrative appeals process has gone on since 1989. The litigation has gone on since 1991.

9) To date the Commonwealth and Town of Chatham have been unwilling to allow anyone in the Little Beach area (marked with an "A" on attached map) to construct seawalls to stop flooding.

10) Given the certainty of flooding without a seawall, there is no market for our property.

11) To date the Hicks and Nelsons have spent approximately $240,000 in legal fees, $50,000 in expert fees, and $46,000 in costs trying to get seawall permits. This is a total of $336,000 on litigation, $60,000 of which was for the administrative appeal itself.

12) The total cost of litigation, flood control, and flood damage thus far is $570,000 or $285,000 per house.

13) In addition, the Town and homeowners have spent approximately $100,000 for Environmental Impact Reports pursuant to the Massachusetts Environmental Protection Act ("MEPA", G.L. c. 30, sec. 61-62H). The Commonwealth's certification of the "Phase II EIR" for appellants' homes does not include recommendations for flood control ("section 61 findings"). We will have to pay for these findings. Given the experience with the cost of

the EIR and cost of engineering studies for my property, I estimate this will cost at least $10,000 per appellant for plans, exerts and lawyers. An appeal would add another $10,000 to $20,000.

14) Twenty-nine seawalls have been built in the EIR study area since 1987. The Commonwealth's Waterways Division created standard seawall design specifications for Chatham in 1988. These seawalls cost approximately $1,000 per linear foot to construct. The average lot in the flood area is 150 feet across, bringing the average cost to construct a seawall in Chatham to $150,000.

Signed under the pains and penalties of perjury this 8th day of August 1994.

/s/ Evelyn S. Nelson
Evelyn Nelson

/s/ Alfred B. Nelson
Alfred B. Nelson

COMMONWEALTH OF MASSACHUSETTS

Barnstable, ss. August 8, 1994

Signed and sworn to before me, the undersigned Notary Public.

/s/ Nicholas B. Soutter
Notary Public
Comm. Exp.: 031695

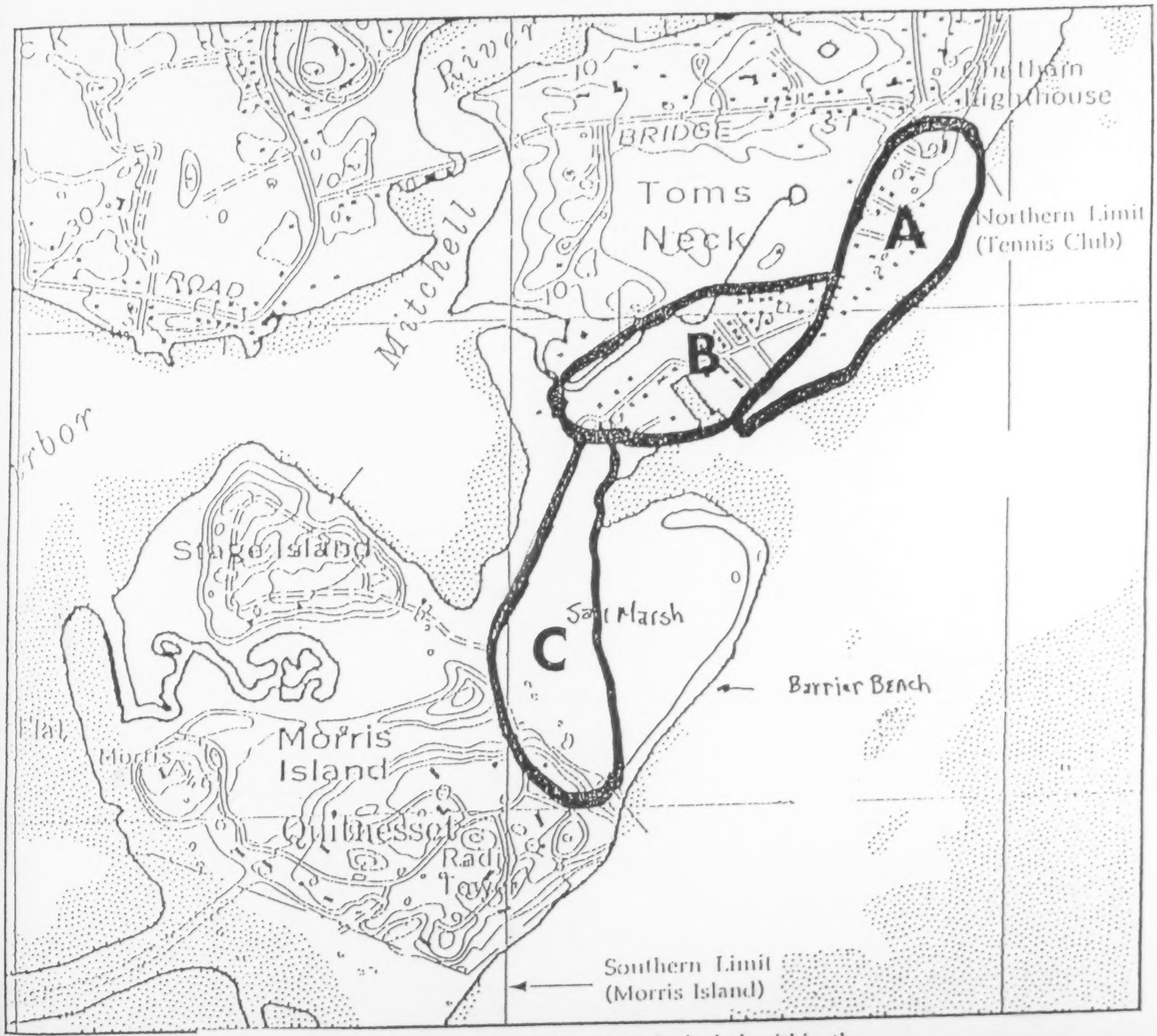

Figure 2.2: Chatham mainland shoreline included within the

APPENDIX 6

310 CMR: DEPARTMENT OF ENVIRONMENTAL QUALITY ENGINEERING

* * *

1.01: continued

corrections and may make disposition thereof at appropriate times during the course of the proceeding.

(l) Briefs. At the close of the taking of testimony, the Agency or Presiding Officer shall fix the terms for the filing of briefs.

(m) Settling the Record.

1. Contents of Record. The record of the proceeding may consist of the following items: pleadings, prehearing conference memoranda, magnetic tapes, orders, briefs, and memoranda, answers to interrogatories and depositions, transcripts, exhibits, and other papers or documents which the Agency or Presiding Officer has specifically designated be made a part of the record. The record shall at all reasonable times be available for inspection by the Parties.

2. Evidence After Completion. No evidence shall be admitted after completion of a hearing or after a case submitted on the record, unless otherwise ordered by the Presiding Officer.

3. Weight of Evidence. The weight to be attached to any evidence in the

record will rest within the sound discretion of the Agency or Presiding Officer. The Agency or Presiding Officer may in any case require either Party, with appropriate notice to the other Party, to submit additional evidence on any matter relevant to the Adjudicatory Proceeding.

4. Exceptions. Formal exceptions to rulings on evidence and procedure are unnecessary. It is sufficient that a Party, at the time that a ruling is made or sought, makes known his objection to such action and his grounds, therefor, provided that, if a Party has no opportunity to object to a ruling at the time it is made, or to request a particular ruling at an appropriate time, such Party, within three (3) days of notification of action taken or refused, shall state his objection and his grounds therefor.

(n) Decision.

1. Tentative Decisions. Tentative decisions shall not be issued as a matter of routine, but shall be issued only if a Party requests a tentative decision either in writing or orally on the record, prior to the close of the hearing on the merits; or if the agency determines the tentative decision should be issued in the interest of justice. Every tentative decision shall be in writing and shall contain a statement of the reasons therefor, including a determination of every issue of fact

or law necessary to the decision. Whenever a tentative decision is rendered, the Parties shall have the opportunity to file objections to the decision and argument in support thereof, in writing with the Agency. The Parties shall have seven (7) days from the receipt of the tentative decision to make such filing. The Agency shall have the discretion to allow or order the Parties to argue orally before the head of the Agency.

If the majority of the Agency officials who must sign the Final Decision have personally heard or read the evidence, the Agency shall not be required to comply with a request to issue a tentative decision.

2. Final Decisions. Every final Decision shall be in writing and shall be signed by the Presiding Officer or by those officials of the Agency who are required by law to sign such Decisions. Every final Decision shall contain a statement of the reasons therefor, including a determination of every issue of fact or law necessary to the Decision, provided that if a final Decision was preceded by a tentative Decision, the final decision may incorporate by reference determinations set forth in the tentative Decision, subject to such modifications and discussion as the Presiding Officer or Agency may deem appropriate to respond to

timely filed opposing and concurring views with the tentative Decision.

3. Presiding Officer Unavailable. When a Presiding Officer becomes incapacitated or unavailable to render a Decision, a tentative Decision shall be rendered by a substitute Presiding Officer upon the record as herein defined.

(o) Reopening of Hearings. On its own motion or on motion of any Party, the Agency or Presiding Officer may at any time before a tentative or final Decision is issued request that the hearing be reopened for the purpose of receiving new evidence.

(p) Motion for Reconsideration. Any Party may file a Motion for Reconsideration, setting forth specifically the grounds or statutory provision relied upon to sustain the Motion, within ten (10) days from the date a copy of the Decision is mailed to the Parties by the Agency or Presiding Officer.

(q) Further Appeal. After the issuance of a final Decision, any Party who has the right to seek administrative or judicial review of the Decision may file with the appropriate administrative agency or court.

(r) Withdrawal of Exhibits. After a Decision has become final and all appeal periods have lapsed the Agency or Presiding Officer may in its discretion, upon motion, permit the withdrawal of original exhibits or any part thereof by the Party or Person entitled thereto.

(11) Stipulations and Agreements.

(a) Stipulations. The Parties may by written stipulation filed with the Agency or Presiding Officer at any stage of the proceeding, or by oral stipulation made at the hearing, agree upon any pertinent fact in the proceeding. In making its findings, the Agency or Presiding Officer need not be bound by any stipulation to which the Agency is not a party.

(b) Settlement by Agreement of the Parties. If at any time all Parties to the Adjudicatory Proceeding agree to dispose of the Adjudicatory Proceeding by stipulation, agreed settlement, or consent order, the Parties shall put such agreement in writing and submit it to the Agency for its approval. Every such agreement shall include a provision that if the Agency approves the agreement, the Parties waive whatever rights they have to

1. appeal the decision to any other Agency or to any Court,

2. rehearing, reargument and reconsideration,

3. notice of their rights of appeal and of rehearing, reargument and reconsideration, and

4. a tentative decision.

If the Agency determines that to proposed agreement is in accordance with the Agency's responsibilities to protect the interests entrusted to it by law, the Agency shall issue in writing a Final Decision incorporating the said agreement

among the Parties. Said Final Decision shall be signed by the head of the Agency. Except as specifically required by this Rule, said Final Decision shall not be subject to 310 CMR 1.01(10)(n). If the Agency determines that the proposed agreement is not in accordance with the Agency's responsibilities to protect the interests entrusted to it by law, the Agency shall refuse to approve the agreement, shall notify the Parties to that effect, and the Adjudicatory Proceeding shall go forward.

1.02: (Not Applicable to Proceedings before the Department of Environmental Quality Engineering, pursuant to 310 CMR 1.01(1)).

1.03: Miscellaneous Provisions Applicable to All Adjudicatory Proceedings

(1) Preamble. Section 1.03 of the Adjudicatory Rules of Practices and Procedure is applicable to all proceedings held under Sections 1.01 and 1.02 of these rules.

(2) Effective Date. These rules shall take effect ninety (90) days from the date of publication thereof by the Secretary of the Commonwealth and shall govern Adjudicatory Proceedings commenced after said ninety (90) days for all Agencies within the jurisdiction of these rules.

(3) Citation. These Rules may be cited as "Standard Rules" or "Standard Rules for Adjudicatory Proceedings" or "Standard Rules of Practice and Procedure", in each case followed by the particular rule or section number, or by

using the appropriate Code of Massachusetts Regulations numbers.

(4) Availability of Rules. Copies of all rules shall be available upon request to any person from the Office of the Secretary of the Commonwealth and the

* * *

10.04: continued

Estuary means:

(a) any area where fresh and salt water mix and tidal effects are evident; or

(b) any partially enclosed coastal body of water where the tide meets the current of any stream or river.

Extension Permit means a written extension of time within which the authorized work shall be completed. It shall be made on Form 7 of 310 CMR 10.99.

Fill means to deposit any material so as to raise an elevation, either temporary or permanently.

Final Order means the Order issued by the Commissioner after an adjudicatory hearing or, if no request for hearing has been filed, the Superseding Order or, if no request for a Superseding Order has been filed, the Order of Conditions.

Flat (tidal) is defined in Part II, 310 CMR 10.27(2)(b).

Flood Control means the prevention or reduction of flooding and flood damage.

Freshwater Wetlands are defined in M.G.L. c. 131. s. 7, para. 7.

General Performance Standards means those requirements established by 310 CMR 10.00 for activities in or affecting each of the Areas Subject to Protection Under the Act. They are found in Part II, 310 CMR 10.25 through 10.35 and 10.37, and Part III, 310 CMR 10.54 through 10.57 and 10.59 through 10.60.

Ground Water Supply means water below the earth's surface in the zone of saturation.

Important Wildlife Habitat Functions mean important food, shelter, migratory or overwintering areas, or breeding areas for wildlife.

Interests Identified in the Act means public or private water supply, ground water supply, flood control, storm damage prevention, prevention of pollution, protection of land containing shellfish, protection of fisheries, and protection of wildlife habitat.

Issuing Authority means a conservation commission, mayor, the selectmen or the Department, whichever is applicable.

Lake means any open body of fresh water with a surface area of ten (10) acres or more, and shall include great ponds.

Land Containing Shellfish is defined in Part II, 310 CMR 10.34(2).

Land Subject to Coastal Storm Flowage means land subject to any inundation caused by coastal storms up to and including that caused by the 100-year storm, surge of record or storm of record, whichever is greater.

Land Subject to Flooding is defined in Part III, 310 CMR 10.57(2).

Land Subject to Tidal Action means land subject to the periodic rise and fall of a coastal water body, including spring tides.

Land Under Salt Ponds is defined in Part II, 310 CMR 10.33(2).

Land Under Water Bodies and Waterways means the bottom of, or land under, the surface of the ocean or any estuary, creek, river, stream, pond, or lake. Land under the ocean and estuaries is further defined in Part II, 310 CMR 10.25(2); land under inland water bodies is further defined in Part III, 310 CMR 10.56(2).

Lot means an area of land in one ownership, with definite boundaries.

APPENDIX 7

NICHOLAS B. SOUTTER
ATTORNEY AT LAW
ONE WASHINGTON STREET
WELLESLEY, MASSACHUSETTS 02181

617-237-6300

617-237-6360

NICHOLS B. SOUTTER
PAUL S. MCGOVERN

AVOCAT
RECHTSANWALT
ABOGADO
ADVOGADO
ADBOKAT

February 7, 1992

BY HAND AND CERTIFIED MAIL

Wetland Protection Division
South East Regional Office
Department of Environmental Protection
Lakeville Hospital
Main Street
Lakeville, MA 02347

RE: Alfred B. Nelson, 27 Morris Island Road, Chatham, MA, File No. SE-10-987

Dear Sir or Madam:

The above-captioned petitioner hereby requests that the Department of Environmental Protection issue a Superceding Order to allow the above-captioned project.

The petitioner's situation is an emergency. His Chatham Harbor home is exposed to the direct force of storm-driven ocean waves. Further storm activity will destroy the home at any time.

Chatham Conservation Commission's denial of said project (Order of Conditions issued January 30, 1992) is inconsistent with the stated purpose of the Wetlands Protection Act (G.L. c. 131, sec. 40) and with provisions of 310 CMR 10.00 et seq. for reasons including but not limited to:

1. Proposed construction would take place in an area that is not significant to storm damage and flood control.

Chatham Harbor has experienced severe erosion since the 1987 breakthrough of the Chatham barrier beach. The erosion is caused by ocean waves. It is not controlled or mitigated by sediment located at or eroded from any Chatham Harbor property. Sediment eroded from the petitioner's property plays no role in flood-protecting outlying areas.

2. The project meets all applicable performance standards and would have no impact on outlying areas.

Sixty percent of the Chatham Harbor area is protected by DEP-approved seawalls. The petitioner requests a seawall of the approved design. Generally accepted scientific knowledge and experience at Chatham show that this design does not cause or accelerate erosion in outlying areas.

The petitioner requests a variance pursuant to 310 CMR 10.36:

1. The proposed project is the only reasonable alternative for the protection of interests identified by the Act (supra) including storm damage prevention and flood control.

In October, 1991, petitioner's property was exposed to storm-driven waves generating 35,000 foot pounts [sic] of force. Petitioner's DEP-approved sand nourishment project failed. Only the requested seawall can protect petitioner's property from this onslaught.

2. The proposed project includes mitigating measures that protect the interests of the Act.

The nature of coastal erosion in general and at Chatham, the manner in which seawalls commonly function, and the specific project design ensure that the proposed seawall will have no adverse impact on outlying areas.

3. A variance will further community interests and will prevent the further taking of the petitioner's property.

The project will protect low-lying, inland areas and public ways from destruction. All seawalls built in Chatham since 1987 have proven successful. All other attempts at flood control have failed.

Petitioner's project should be allowed as the wetland regulations (supra) upon which the Chatham Conservation Commission's based its denial of petitioner's proposal are unscientific, irrational, and unsuited to mandated legislative purpose. The regulations condemn petitioner's property to destruction without compensating public benefit.

Further grounds for petitioner's request are provided in memos, maps, affidavits, and technical article enclosed.

This request has been sent, certified mail, to the petitioner and the Chatham Conservation Commission.

The petitioner reserves the right to update and amend this request with appropriate notice.

Sincerely,

/s/ Nicholas B. Soutter

NBS/mps
Enclosures

cc. Chatham Conservation Commission
Madelyn Morris, Esq.
Bruce P. Gilmore, Esq.
Alfred Nelson
Louis Hicks

NICHOLAS B. SOUTTER
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ONE WASHINGTON STREET
WELLESLEY, MASSACHUSETTS 02181

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PAUL S. MCGOVERN

AVOCAT
RECHTSANWALT
ABOGADO
ADVOGADO
ADBOKAT

February 14, 1992

PRIORITY MAIL

Commonwealth of Massachusetts
Department of Environmental Protection
PO Box 4062
Boston, MA 02211

RE: Chatham – Wetlands File No. SE 10-987 Request for Superseding Order

Dear Sir or Madam:

In response to Department correspondence of February 11, 1992 concerning conditional acceptance of the above-captioned request, enclosed please find a check in the amount of $50.00 and completed Request for Departmental Action Fee Transmittal Form.

The petition has decided to withdraw the variance claim because they cannot afford the requested $4,000.00 fee.

The petitioner further states that said fee may unconstitutionally condition his right to argue a variance.

The Department is hereby notified that this case involves an Order that "so restricts the use of the property as to constitute an unconditional taking without compensation."

Please be further advised that this property is in imminent danger of destruction as there remains only forty feet of frontage between it and the ocean.

Request is therefore made for a speedy determination.

Sincerely,

/s/ Nicholas B. Soutter

NBS/mps
Enclosures

cc. DEP Lakeville, CERTIFIED MAIL/
FEDERAL EXPRESS
Alfred Nelson, CERTIFIED MAIL
Chatham Conservation Commission,
CERTIFIED MAIL
Madelyn Morris, Esq.
Bruce P. Gilmore, Esq.

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PAUL S. MCGOVERN

AVOCAT
RECHTSANWALT
ABOGADO
ADVOGADO
ADBOKAT

July 8, 1992

CERTIFIED MAIL

Wetland Protection Division
South East Regional Office
Department of Environmental Protection
Lakeville Hospital
Main Street
Lakeville, MA 02347

RE: Lewis W. Hicks, III, 40 Dune Drive, Chatham, MA
File No. Se-101027

Dear Sir or Madam:

Enclosed please find a check in the amount of $50.00. Petitioner Lewis W. Hicks, III hereby requests that the

Department of Environmental Protection issue a Superceding Order to allow the above-captioned seawall project. The project was denied by the Chatham Conservation Commission on July 2, 1992.

Petitioner's situation is an emergency. His Chatham-harbor home is exposed to the direct force of storm-driven ocean waves. Further storm activity will destroy the home at any time.

Chatham Conseravation [sic] Commission's project denial is inconsistent with wetlands legislation (G.L. c. 131, sec. 40 and G.L. c. 130, sec. 105) and regulations (310 CMR 10.00 et seq.) for reasons including but not limited to:

1) The proposed construction would take place in an area that is not significant to storm damage and flood control. Chatham Harbor has experienced severe flooding that is not controlled or mitigated by sediment located at or eroded from any Chatham Harbor property.

2) The project meets all applicable peformance [sic] standards and would have no impact on outlying areas. Petitioner requests a seawall of the same design as those now protecting sixty percent of Chatham Harbor. Generally accepted scientific knowledge and experience at Chatham has shown that the design does not cause or accelerate erosion in outlying areas.

Petitioner further states that he will not request a variance pursuant to 310 CMR 10.36. The fee may unconstitutionally condition his right to argue a variance. It is not in accordance with the Department's stated policies concerning the availability of review.

Petitioner reserves all rights to argue that a variance should be granted as this case involves an Order that "so restricts the use of the property as to constitute an unconditional taking without compensation":

1) The proposed project is the only reasonable alternative for the protection of interests identified by the Act (supra). Waves of up to 35,000 foot pounds of force have struck petitioner's homes. Only seawalls can protect against such force. Petitioner's neighbor, Alfred Nelson, attempted beach nourishment. All sand was lost in a single storm.

2) The proposed project includes mitigating measures that protect the interests of the Act. The seawall is of the design approved by the Commonwealth for most of Chatham Harbor. The design protects the property it fronts without damaging outying [sic] areas.

3) A variance will further community interests and will prevent the further taking of petitioner's property. The project will protect adjacent low-lying areas and public ways from destruction. All seawalls built in Chatham since 1987 have proven successful. All other attempts at flood control have failed.

Petitioner's project should be approved as the wetland regulations (supra) upon which Chatham Conservation Commission based its denial are unscientific, irrational, and unsuited to mandated legislative purpose. The regulations condemn petitioner's property to destruction without a showing by the Department that the use to which petitioners wish to put their property constitutes a nuisance. The destruction of petitioner's

property that can be expected by the Conservation Commission's project denial will have no compensating public benefit.

Given that petitioner's property is in imminent danger of destruction, request is made for a speedy determination.

This request has been sent, certified mail, to the petitioner and the Chatham Conservation Commission.

The petitioner reserves the right to update and amend this request with appropriate notice.

Sincerely,

/s/ Nicholas B. Soutter

NBS/mps

cc. Chatham Conservation Commission
Lewis Hicks
Alfred Nelson
Madelyn Morris, Esq.

APPENDIX 8

E.I.T.

Engineering Information Technology, Inc.

Engineering Services Division

March 10, 1988

Ms. Judy Perry
Division of Water Pollution Control
D.E.Q.E.
One Winter Street
Boston, MA 02108

Re: Request for Water Quality Certification

Dear Ms. Perry:

As the Engineering Firm representing the B.R.E.A.C.H. Group, Chatham, Mass., we have been working with Mr. Charles Natale, Jr. and Mr. James Vincent of the Division of Waterways, since February 22, 1988, in developing an appropriate revetment plan for the present conditions that exist in Chatham. On March 7, 1988, we finalized the enclosed plan that we all feel will withstand the 100 year event and have minimal impact on adjacent areas.

We would now like to move forward by requesting a Water Quality Certification as discussed at our meeting in your office February 22, 1988. Thank you for the prompt help and attention afforded me throughout this process.

Respectfully,

Robert E. Weaver

REW:cj

73 Cranberry Highway (Rte. 6A), Box 631,
Sagamore, MA 02561 (617) 428-2676
73 Waverly Street, Arlington, MA 02174
(617) 782-5071

cc Mr. Kenneth Hagg
Acting Commissioner
D.E.Q.E.
One Winter St.
Boston, MA 02108

Waterways Regulations Program
D.E.Q.E.
One Winter Street
Boston, MA 02108
Attention: Charles J. Natale, Jr.

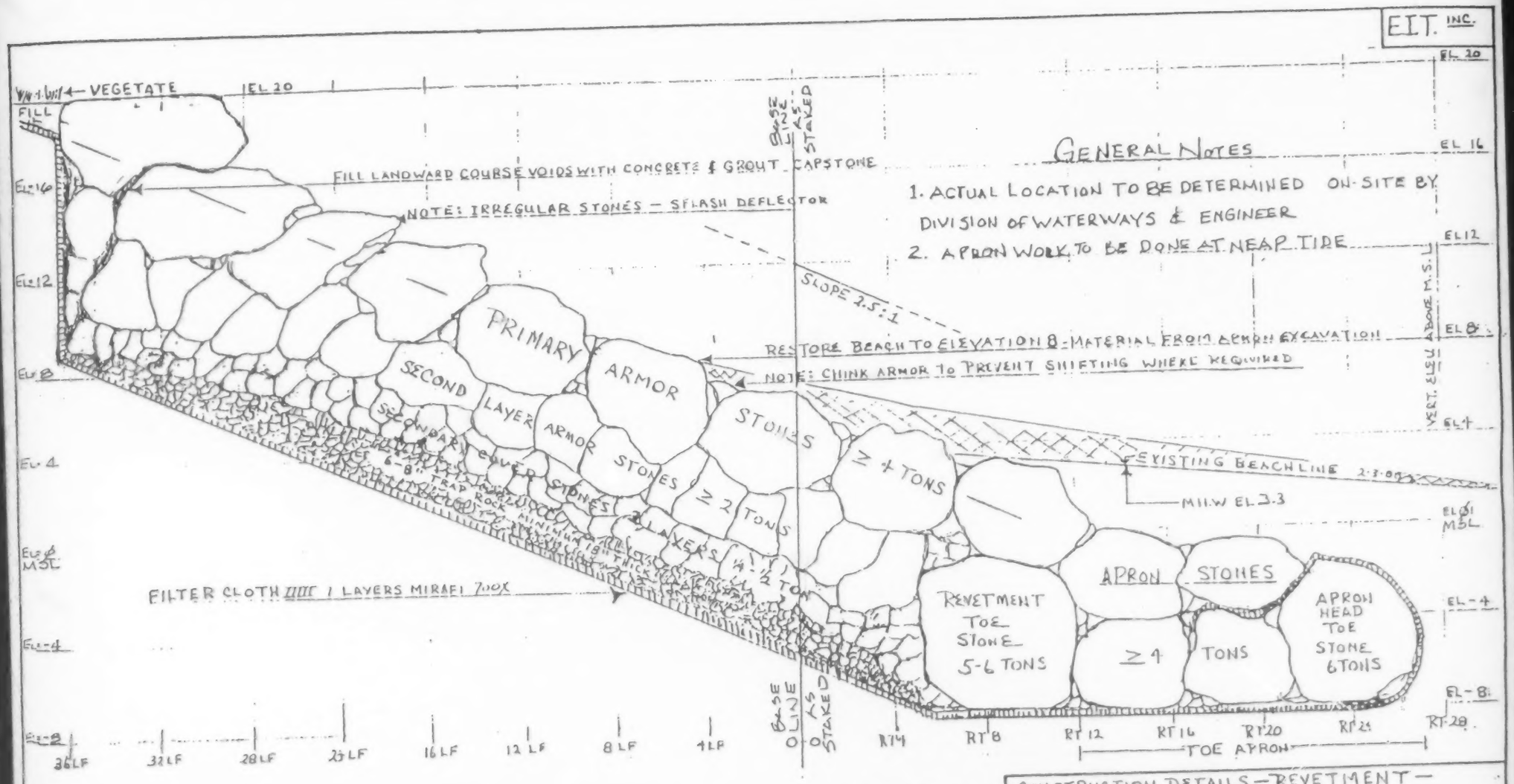
Gary Clayton, Division Director
Division of Wetlands-Waterways Regulation
D.E.Q.E.
One Winter Street
Boston, MA 02108

D.E.Q.E. – Southeast Region
Lakeville Hospital
Lakeville, MA 02347
Attention: Elizabeth A. Kouloheras

Executive Office of Environmental Affairs
MEPA Unit
100 Cambridge Street
Boston, MA 02202
Attention: Steve Davis

U. S. Army Corps of Engineers
N.E. Division – Regulatory Branch
424 Trapelo Road
Waltham, MA 02254
Attention: Peter Kube

Mass. Coastal Zone Management
100 Cambridge Street
Boston, MA 02202
Attention: Jim O'Connell



GENERAL NOTES

1. ACTUAL LOCATION TO BE DETERMINED ON-SITE BY DIVISION OF WATERWAYS & ENGINEER
2. APRON WORK TO BE DONE AT NEAP TIDE

OWNERSHIP OF DOCUMENTS: All documents, including original drawings, estimates, specifications, field notes and data are and shall remain the sole and exclusive property of the Surveyor/Engineer as instruments of service. The Client may, at his expense, obtain record prints of drawings, in consideration of which the Client will use them solely in connection with the above described project and not for the purpose of making subsequent extensions or enlargements thereto.

COMMONWEALTH OF MASSACHUSETTS — WILLIAM LIEBERMAN — REGISTERED PROFESSIONAL ENGINEER

3-3-88

CONSTRUCTION DETAILS — REVETMENT — CHATHAM, MASS.

SCALE: 1" = 4'	APPROVED BY B.REACH PROJECT	DRAWN BY REW
DATE: MARCH 2, 88		REVISED: 3.4.88

ENGINEERING INFORMATION TECHNOLOGY INC.
73 WAVERLY ST. ARLINGTON, MA. 02174 428-2676
WILLIAM LIEBERMAN-PE #23971

DRAWING NUMBER: DETAIL DRAWING #2

AUBREY
CONSULTING, INC.

(logo)

PHASE I
DRAFT ENVIRONMENTAL IMPACT REPORT
SHORE PROTECTION STRUCTURES
AUNT LYDIA'S COVE TO BEACH AND
TENNIS CLUB
CHATHAM, MA

JANUARY 1993

* * *

6.0 ENVIRONMENTAL MITIGATION ALTERNATIVES ANALYSIS

6.1 Introduction

Because of the unique character of this Phase I EIR, namely providing environmental information to the permitting process following construction of emergency measures, this EIR follows a slightly different analysis procedure than most. Most EIR's require a thorough assessment of alternatives for the project. However, since this EIR covers only existing seawalls, permitted under emergency action, there is no need to describe alternatives to constructing the seawalls. As agreed to at a conference with regulatory personnel from MEPA and MCZM, held in Boston on 29 June 1992, this EIR addresses mitigation alternatives instead of project alternatives. After analysis of mitigation alternatives, a recommended alternatives mix is provided.

Where possible, we have indicated "trigger conditions," when some occurrence mandates implementation of an option at some time in the future. This adaptive plan provides much more effective management of Chatham Harbor than that possible if all options were to be implemented immediately.

6.2 Description of Alternatives

6.2.1 No Action

This alternative assumes that the shoreline protection structures remain as built, with no changes. The results of this No Action alternative will be the following:

- Increased erosion rates to the north of Section 2 (Fig. 4-12, towards Aunt Lydias Cove), due to loss of sediment supply.

- Undermining and likely failure of some revetments due to encroachment of the navigation channel towards the western bank (easterly mainland shore) and inadequate toe protection.

- Loss of beach fronting those revetments (much has been lost already), as wave scattering processes and lack of sediment supply increase water depths in front of the walls.

- Loss of public walking access along the beach as a result of loss of beach in front of the revetments.

6.2.2 Dune Reconstruction and Planting

Construction of revetments along with increased erosional forces due to the formation of the new inlet have

increased erosion rates along certain unprotected areas of the Chatham shoreline. Since the structures were constructed soon after the formation of the inlet, it is difficult to separate what percentage of erosion along unprotected properties is caused by natural processes and what percentage is caused by revetment construction. Severe overwashing of the coastal dune has

* * *

6.2.5 Repair/Reconstruction of endangered and inadequate structures

Revetments that have been constructed may not be adequately designed to withstand the erosional forces along the Chatham Harbor shoreline. In some areas, erosion has washed away the beaches fronting the structures allowing waves to impinge directly on the revetment face during periods of normal water level. Severe storms will have a large impact on such areas since no beach exists to dissipate the wave energy before it strikes the revetment. Waves striking the revetment directly will cause scour at the toe of the structure, eventually leading to structural failure of the revetment. Other structures may have been designed as temporary structures (gabion revetments at the Dimm and Williams properties) or have inadequate stone size to resist direct storm wave attack (revetment at the Molander property). These revetments will require immediate repair to protect the integrity of the structure. Another mode of revetment failure documented is slumping due to the inadequate placement of filter cloth during construction. This deficiency has occurred at two structures located on the Burroughs and Zisette properties.

Rather than removing the existing structures, the old revetments were fortified by adding additional stone to increase the density of stone coverage and height of the structure. Filter cloth cannot successfully be placed between layers of rock, since uneven pressure of the rocks will cause tearing of the filter cloth. However, an attempt was made to place filter cloth between the rock layers. This fabric has been torn and no longer serves its original purpose. The revetment is beginning to slump as the result of sediment leaching out from the bank. These structures should be repaired by filling the voids with crushed stone and then chinking the gaps between the large stones. This mitigation will not eliminate sediment from leaching out from the bank but it will greatly reduce this process. All of the structural repairs suggested above should be implemented immediately.

Along Section 2 (Fig. 4-12), the erosion at the base of the structures is further complicated by the migration of the West Channel toward the shoreline. The migration of the channel is difficult to predict. A severe storm might change the position of the channel within the harbor. If the navigation channel continues to migrate toward the shoreline, stabilization of the toe of the revetments will be required. The navigation channel is closest to the shoreline at both the north and south ends of Section 2. Since West Channel is narrower at the north end of Section 2, causing stronger tidal currents, this area appears to be endangered more than the area to the south.

"Trigger conditions" for the two possible causes of erosion along the reveted sections, erosion due to wave action and erosion due to the migration of West Channel,

have been developed as guidelines for repair/construction of the existing structures. For structures not affected by the migration of West Channel toward the shoreline, the trigger condition for repair would be when either the top half of any revetment toe stone becomes exposed or when there is no beach fronting the structure at MLW. In addition, a property owner should initiate plans to repair their revetment when the top of any toe stone becomes visible. The engineer for each property owner having a

* * *

App. 94

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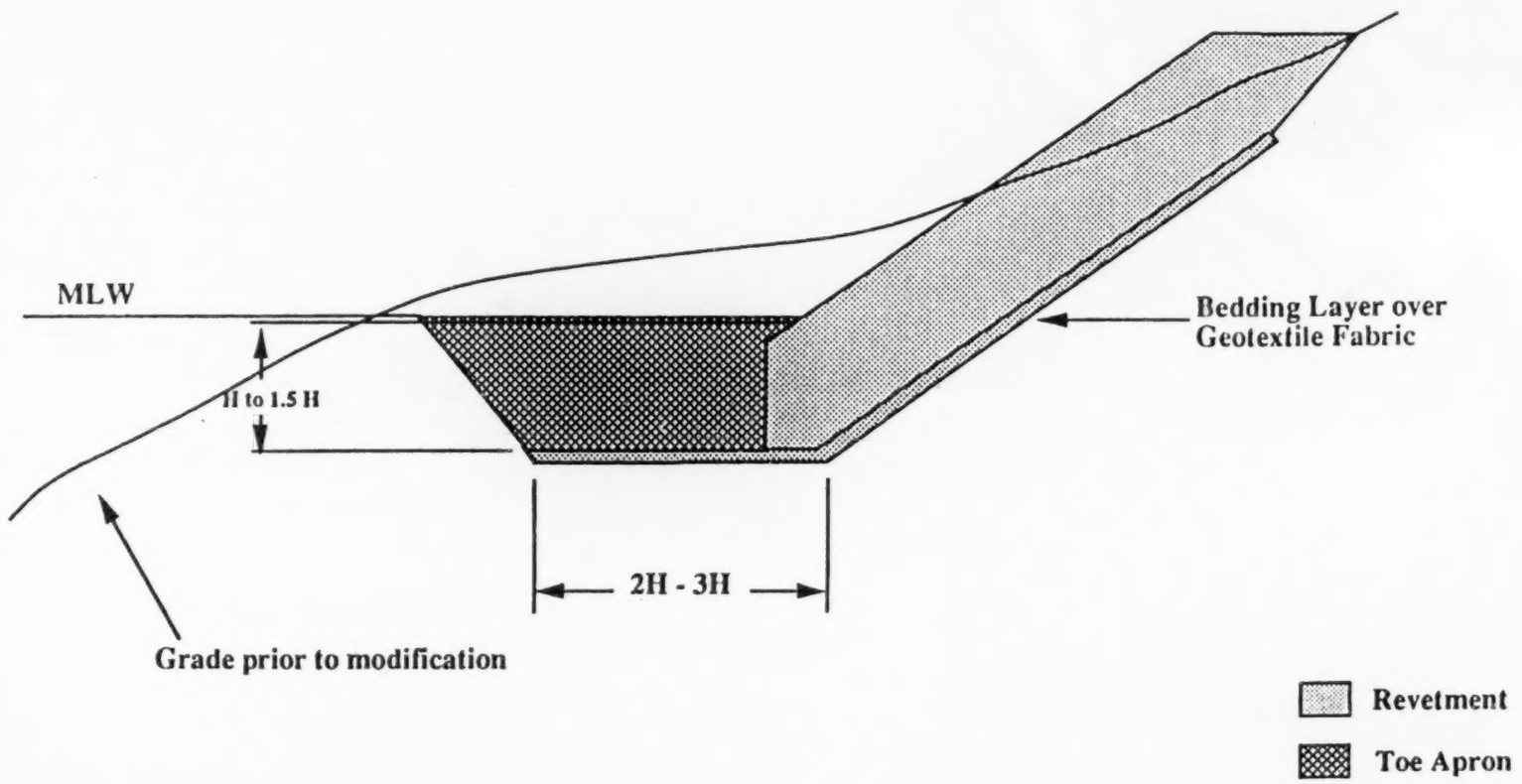
PHASE II
FINAL ENVIRONMENTAL IMPACT REPORT
TENNIS CLUB TO MORRIS ISLAND
CHATHAM, MA

MAY 1994

REVETMENT AND TOE SCOUR APRON



Note: H = Height of unbroken design wave
R = Thickness of armor layer

Figure I-2

Figure I-2. Typical cross-section of revetment and toe scour apron.

* * *

VII. RESPONSE TO MR. NICHOLAS SOUTTER'S COMMENT LETTER DATED 17 JANUARY 1994

Mr. Soutter's comment letter puts forward several unique coastal engineering concepts. However, his main point is that his client, Mr. Nelson, would like to construct a seawall and this seawall should not be substandard.

1. COMMENT pg. 2: If the EIR is allowed, the most (Mr. Nelson) will get is a substandard seawall.

REPLY: Mr. Soutter's estimation of the design wave height expected at the Nelson property is incorrect. Additionally, a seawall does not have to be 20 ft high to withstand even Mr. Soutter's 18.5 ft predicted wave height. ACI has never advocated designing a seawall that will not withstand open ocean wave forces. This is the reason we have specified minimum standards for the proposed revetment in the DEIR. The actual design of each section will vary slightly depending on the elevation of the landform behind the seawall. We have explained this to Mr. Soutter in recent conversations.

2. COMMENT pg. 3: Since the beach needs 300,000 yd^3 of sand a year just to stay in place, dredging slows or stops beach growth to the south and could cause the beach to collapse. Dredging means that we will face the design wave soon and possibly forever.

REPLY: We are unclear about where the dredging Mr. Soutter is referring to will take place. However, we agree that the Nelson property will experience open ocean waves in the next several years. We do not agree that the

property will experience open ocean waves forever. The evolution of the barrier beach system will first cause the Nelson property to experience open ocean wave conditions and then North Beach will eventually grow southward to protect the area.

Interrogatory No. 6.

Identify members of all Study Groups (310 CMR 10.00, Preface 1983 regulatory Revisions, VI), task forces and/or Technical Review Groups (310 CMR 10.00, Preface 1983 Regulatory Revisions, Part II, paragraph 2, and Part V) and members of any other group contributing to discussion of study for the creation, drafting, or amending 310 CMR 10.21, 22, 23, 27-30 and 36 from 1974 to present, and summarize issues and comments and reasoning (pro and con), conclusions and dissent relative to any such study, enterprise or discussion.

Response to Interrogatory No. 6.

Lester B. Smith and Gary Clayton who were then with the Massachusetts Office of Coastal Zone Management, Charles A. Mayo and Graham S. Geise who were then at the Provincetown Center for Coastal Studies, Thomas Powers who was then a lawyer for the Department of Environmental Quality Engineering, Barbara Ingle who was then employed in the Wetlands Program, and James Coleman who was and is an employee of the Department participated in the original drafting of the Coastal Wetlands Regulations. There have been no study groups, task forces or technical review groups that were specially created to revise the provisions of the Wetlands Regulations that govern coastal dunes, coastal banks, coastal beaches and barrier beaches as means of flood control and storm damage prevention. The Commonwealth will make all comments on the original version of the Coastal Wetlands Regulations and any amendments to these

* * *